



LOGICK;

OR,

AN ESSAY

ON

THE ELEMENTS, PRINCIPLES,

AND DIFFERENT

MODES OF REASONING.

BY

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VOLUME II.

LONDON:

PRINTED FOR PAYNE AND MACKINLAY IN THE STRAND.

1807.

31.177

Printed by T. Bensley,
Bolt Court, Fleet Street, London.

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1807
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LOGICK.

CHAPTER VII.

OF THE APPLICATION OF CALCULATION TO PROBABILITY.

SECTION X.

OF TESTIMONY APPLIED TO NEUTRAL FACTS.

572. Calculation cannot be applied to these before it be known what class of facts they approach most to, and their state may be calculated accordingly. See *ante* No. 495.

SECTION XI.

TESTIMONY APPLIED TO IMPROBABLE FACTS, AS THE EXTRAORDINARY.

573. We may state the improbability of *extraordinary* facts at from $\frac{4}{10}$ to $\frac{1}{20000}$, and of extravagant facts at $\frac{1}{1000000000}$, and of *unnatural* facts, at $\frac{1}{1000000}$, but these vary in different countries.

The calculation being the same in all cases, where the improbability may be known, or conjectured, I shall instance it in simple cases only.

X 574. *Improbable*

574. *Improbable* facts, vouched by a witness, whose credibility is *equal* to the improbability of the fact, that is, who is just as credible as the fact is improbable, or (more technically) whose favourable chances are as much above $\frac{5}{10}$, as the unfavourable are below it, if 10 be the denominator, (or above doubtful, if there be any other denominator,) are rendered *doubtful*, after such attestation, No. 501. Thus if the improbability of the fact is $\frac{2}{10}$, and the credibility of the witness $\frac{8}{10}$, here 8 is as much above 5, as 2 is below it; for the difference from 5 in both cases is 3; then by the affirmative formula, No. 560, $\frac{ba}{ba+b'a'}$, we have $ba=2 \times 8$, and $b'a'=8 \times 2$, consequently $\frac{16}{16+16}=\frac{16}{32}=\frac{1}{2}$ or doubtful.

575. If the improbable fact be *denied* by such a witness, it becomes more improbable; for, by the negative formula, No. 561, we have $\frac{ba'}{ba+b'a}$; then, if a fact whose improbability is $\frac{2}{10}$ be denied by a witness, whose credibility is $\frac{8}{10}$, we have $ba'=2 \times 2$, and $b'a=8 \times 8$, then $\frac{4}{4+64}=\frac{4}{68}=\frac{2}{34}=\frac{1}{17}$ instead of $\frac{1}{5}$, which it at first was.

576. If

576. If the improbable fact be *affirmed* by a witness of a degree of credibility *inferior* to the degree of improbability of the fact, its improbability is lessened, but not destroyed, No. 502; for, by the affirmative formula, as above, the improbable fact being $\frac{2}{10}$, and the credibility of the witness $\frac{6}{10}$, we have $ba=2 \times 6$, and $b'a'=8 \times 4$, then $\frac{12}{12+32}=\frac{12}{44}=\frac{6}{22}=\frac{3}{11}$.

577. But if the improbable fact be *denied* by a witness of *inferior* probability, its improbability is increased, No. 504. Thus, as in the above case, the state of the fact is $\frac{2}{10}$, and of the witness $\frac{6}{10}$; then by the negative formula, we have $ba'=2 \times 4$, and $b'a=8 \times 6$, consequently $\frac{8}{8+48}=\frac{8}{56}=\frac{4}{28}=\frac{2}{14}=\frac{1}{7}$.

578. If the improbable fact is *affirmed* by a witness, whose credibility is *superior* to the improbability of the fact, it becomes *probable* or *certain* according to the degree of superiority. *Ante*, 504.

Thus if the improbable fact be $\frac{2}{10}$, and the credibility of the witness $\frac{9}{10}$, then $ba=2 \times 9$, and $b'a'=8 \times 1$, then $\frac{18}{18+8}=\frac{18}{26}=\frac{9}{13}$.

X 2

579. After

579. After what was seen, No. 577, it were needless to shew, that if an improbable fact were *denied* by such a witness, it would become highly improbable. It would indeed, in the last instance, become $\frac{1}{37}$. *Ante*, 504.

SECTION XII.

OF TESTIMONY APPLIED TO SUPERNATURAL AND MIRACULOUS FACTS.

580. The testimony necessary to induce a belief of such facts, must be such as to produce a *certainty*, and not a mere probability. For the facts themselves being naturally *impossible*, cannot be proved by testimonies, whose truth is merely probable; but that there may be testimonies capable of producing a moral *certainty*, and particularly that those of christianity are such, I have already shewn, No. 352, &c. and may be seen at large in Dr. Paley's excellent treatise.

SECTION

SECTION XIII.

OF THE BELIEF OF A WITNESS.

581.² The belief of a witness is the opinion which he forms, concerning the existence of a fact, whether affirmative or negative, or of the causes, circumstances, or motives, that concern its existence. It is, therefore, rather an *authority* than a *testimony*, and consequently is of greater or less weight, according to the *intelligence* of the person that holds and delivers it.

581. *Note* also, that the affirmative testimony of *ocular* witnesses is preferable, or more to be relied on, as to their object, than the testimony of *auricular* witnesses, as to their objects; for what a man does, is more easily perceived than what a man says. This last may be misunderstood, or mistaken, or not distinctly heard.

SECTION XIV.

OF PLURAL TESTIMONY.

582. By plural testimony I understand, either that, which, originating in simultaneous observations made by two or more persons, may be called *original*; or it may be delivered by the original witness to another, who delivers it to a third, by the third to a fourth, &c. This may be called *successive*, or *transmitted* testimony. I shall first treat of plural original testimony; and as this testimony may be *concordant*, *discordant*, or *contradictory*, each shall be separately considered.

SECTION XV.

OF CONCORDANT ORIGINAL TESTIMONY.

583. The credibility or force of concordant and independent witnesses, is as the product of the chances *favourable* to each, multiplied
into

into each other, (this product forms the *numerator* of the fraction, that expresses their credibility,) and divided by the product of the chances *unfavourable* to each, that is, of their several *deficiencies*; these two products added to each other, present the sum of the several chances, both *favourable* and *unfavourable*, and therefore form the *denominator* of the fraction. Thus, if there were two witnesses, and if the credibility of one of the witnesses were $\frac{6}{10}$, and of another $\frac{7}{10}$, the favourable chances of each are 6 and 7, and their product is 42. The unfavourable chances or deficiencies are 4 and 3, their product is 12; then their resulting combined credibility, is

$$\frac{42}{42+12} = \frac{42}{54} = \frac{777}{1000}.$$

And if there were three witnesses, whose credibilities were respectively $\frac{6}{10}$, $\frac{7}{10}$, and $\frac{8}{10}$, then the product of the favourable chances would be, $6 \times 7 \times 8 = 336$; and their several deficiencies being 4, 3, and 2, and the product of these being $4 \times 3 \times 2 = 24$, the fraction representing the combined credibility is

$$\frac{336}{336+24} = \frac{336}{360} = \frac{933}{1000}.$$

Hence we see the immense

X 4

force

force of the testimony of numerous concordant witnesses.

584. Thus the force of the combined testimony of ten of the apostles, that of each separately, (abstracting from their sufferings, and other circumstances,) being rated at only $\frac{9}{10}$, would amount to $\frac{3486784401}{3486784401 + 1} = \frac{3486784401}{3486784402}$.

585. Hence we see the stress our law justly lays on the concordant opinion of twelve jurymen, if obtained without coercion, and formed by men of sufficient integrity and knowledge; otherwise their verdict is in reality of little or no worth.

586. Observe, however, that the credibility of one witness of *high* credibility, may be *superior* to the combined credibility of two witnesses, whose separate credibilities are *lower*.

Thus if the credibility of one of the concordant witnesses, be $\frac{6}{10}$, and that of the other $\frac{7}{10}$, then their combined credibility is, $\frac{42}{42+12} = \frac{42}{54} = \frac{77}{100}$. Whereas the credibility of one witness may be $\frac{8}{10} = \frac{80}{100}$; and the difference would be still greater, if the credibility of the single witness were $\frac{9}{10} = \frac{90}{100}$.

587. It

587. It is supposed also, as has been already mentioned, that these witnesses are *independent*, that is, have not agreed with each other to make the same report. This, indeed, is implied in the degrees of integrity and veracity which we suppose them to possess, and the want of which, without sufficient reason, we should not suspect; but if we have sufficient cause to suspect, that the concordancy of their testimony arises from any other reason but their joint perception of the same object, the force of their joint testimony is weakened, in proportion to the probability of the truth of that reason. Now, to find how much the credibility of the combined testimony is thereby diminished, let the probability of the existence of the undue cause of the concordancy of the testimony be stated; then,

588. Let the chances favourable to the credit of the joint testimony $=a$, and those unfavourable to it $=a'$; let the chances favourable to the existence of a sinister cause $=b$, and those unfavourable $=b'$; then the resulting credibility of the joint testimony is $\frac{ab'}{ab'+a'b}$.

589. As

589. As there is no precise measure of the credibility of any witnesses, and as different persons may denote the credibility of witnesses by different fractions, I think an intelligent jury should strike an average measure of all their particular estimations, as also of their estimations of the internal probability of the fact attested, and upon the result of the application of these average measures, form their joint opinion; the same mode may be followed in references.

590. The concordancy even of two dubious independent witnesses, is of some weight; and of four such witnesses, the credibility is still stronger, and so much the greater, as they are more numerous; for in proportion to their numbers, their disagreement is much more probable than their agreement, in any particular statement. If therefore, they do agree, this agreement must have some cause; and in the supposition that they are independent, that is, have entered into no concert with each other, no other cause of their agreement can be assigned, but the reality of their having jointly perceived the object attested.

591. The credibility therefore of their
concordant

concordant attestation, is equal to the improbability of their agreement, which is found by subtracting the product of the fractions, resulting from their union, from *one*. Thus the probability of each of the witnesses being $\frac{1}{2}$, the product of two of them is $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$. and $\frac{1}{4}$ subtracted from 1 = $\frac{3}{4}$, for $\frac{1}{4} + \frac{3}{4} = 1$; $\frac{3}{4}$ therefore expresses the improbability of their agreement, and consequently is the measure of the credibility of their joint attestation.

592. To make this conclusion perfectly clear, let us notice the chance of throwing a *head* upon a halfpenny: this is but one chance out of two, for a *harp* is equally possible. Therefore, the chance of turning a head is $\frac{1}{2}$, for only two events can happen; but the chance of turning a *head* twice, or on two halfpence, is only $\frac{1}{4}$, for four events may happen, and this is one of them; for upon one of them you may turn a *head*, and upon the other a *harp*; or upon the first you may turn a *harp*, and on the other a *head*; or you may
turn

turn harps upon both ; or, lastly, you may turn *heads* on both.

593. Hence the credibility of three such witnesses being $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$, the credibility of their concordant attestation is $1 - \frac{1}{8} = \frac{7}{8} = \frac{875}{1000} = \frac{9}{10}$ nearly.

594. This result of the combined testimony of *doubtful* witnesses, is comfortable to a jury, to whom the credibility of the witnesses is frequently unknown ; but to a *single* doubtful witness, even if he should agree with others that are credible, I should pay no regard.

595. As to witnesses whose credibility is below $\frac{1}{2}$, I think them unworthy of consideration, even if they should agree ; for, as they are assumed to be false witnesses, their agreement must be imputed to some sinister cause.

596. From what has been said, No. 586, and 593, we may deduce, that the credibility of a witness of *high* credit, as $\frac{9}{10}$, is superior to that of three witnesses of doubtful credit, and often of many more.

SECTION

SECTION XVI.

OF DR. HALLEY'S ESTIMATION OF CONCORDANT
TESTIMONY.

597. Dr. Halley, 3d Phil. Trans. abridged, 662, lays down the following principles:

First, that *moral certainty* consists in that assurance, in which the mind absolutely acquiesces, and which being had, it requires no further assurance.

Secondly, that *probability* consists in an incomplete certainty; therefore, if a denotes a share of certainty, and c the complement or share wanting to render that certainty complete, then $\frac{a}{a+c}$ will represent that probability. Thus if $a=5$; and $c=1$, then $\frac{5}{5+1}=\frac{5}{6}$; all which is right, and conformable to the principles above laid down.

598. But then he adds,* where there are two concurrent witnesses, of equal credibility,

* Phil. Trans. vol. 21. No. 257, p. 361. and Phil. Trans. Abr. vol. iii. p. 663.

the

the second does no more than lessen part of the deficiency of the first; thus, says he, if the first witness gives me a probability of $\frac{5}{6}$, here $\frac{1}{6}$ is wanting to make that probability a complete certainty; and the second witness gives me $\frac{5}{6}$ of that deficiency, $\frac{1}{6} = \frac{5}{36}$; thus, if one of them gives a share of certainty for £1200, amounting to $\frac{5}{6}$, there remains but an assurance of $\frac{1}{6}$, or of £200, wanting to me for the whole, and the second witness gives me that; that is, to the $\frac{5}{6}$ before had, he adds $\frac{5}{6}$ of the $\frac{1}{6}$ which was wanting; so that there is now wanting, but $\frac{1}{6}$ of $\frac{1}{6} = \frac{1}{36}$, and consequently their joint attestation gives an assurance of $\frac{35}{36}$; (for since only $\frac{1}{6}$ is wanting to make a certainty, the fraction must be $\frac{35}{36}$.)

599. It must be owned this is a strange mode of calculation; for, in the first place, it is supposed, that the assurance of the first witness reaches to no more than to $\frac{5}{6}$ of the £1200, that is, to £1000, and that, as to that sum, it amounts to a certainty, (and indeed he calls it so;) whereas, it is evident that it reaches

reaches to the whole of the 1200, as the witness expressly asserts; and the $\frac{1}{6}$ wanting, relates to the credibility of the witness, and not at all to any particular part of the sum or thing attested.

Suppose such a witness attested that some man were dead, could it be said, that he gave an assurance of $\frac{5}{6}$ of his death?

Again, the testimony of the second witness extends to the whole £1200; and not to any particular portion of it; and therefore, confining it to $\frac{1}{6}$ of that sum, viz. £200, is merely arbitrary, and without any foundation.

600. As to what he adds in the corollary, I allow the instance he gives to be true though deduced from false principles; and it perfectly agrees with what I laid down, No. 591, namely, that the combined attestation of two dubious witnesses, gives $\frac{3}{4}$ of a certainty, and of three such witnesses, $\frac{7}{8}$ of a certainty, &c.

SECTION

SECTION XVII.

OF VARIANT ORIGINAL TESTIMONY.

601. By *variant* testimony I understand that in which the reports of two or more witnesses differ, without being either contrary or contradictory to each other. If there be three witnesses, all three may differ, or two may agree and one differ; if there be four, three may agree, and one differ, or two may agree and two differ, or all four may differ, &c.; hence all the possible variations of witnesses, *relative to a single point*, are equal to the number of witnesses less 1.

602. Again, variations of testimony may respect either the substance of the fact, or its adjuncts, or its circumstances.

Thus, in the relation of a battle by three witnesses, one of them may say, that three regiments pursued the enemy five miles; another may say, that two regiments pursued the enemy three miles; and the third may say,
that

that the enemy were pursued, omitting the number of miles.

603. Here all three agree as to the substance of the fact, viz. the pursuit, but they differ as to the adjunct, that is, the number of regiments that pursued, and as to the circumstance, that is, the number of miles to which the pursuit extended.

604. The substance and circumstances of a fact, are comprehended in a Latin line, *quis, quid, quot, ubi, quibus auxiliis, cur, quomodo, quando*. Here *quid* denotes the substance of the fact, *quis* and *quot* the agents, or adjuncts, and the remainder the circumstances.

605. Assertion of a fact by one witness, and its omission by another, equally capable of observing it, amounts to a variation in the substance of the fact, as is evident.

606. A variation as to the substance of the fact, in the testimonies of two witnesses *equally credible*, renders the testimony of each of them *doubtful*; for since the object, if it existed, should have been observed by both, there is as much reason to disbelieve its existence, from the omission of it, by one capable of discerning it, as there is of believing
Y it

it from the assertion of the other ; and consequently they are to be considered as contradictory witnesses.

607. A variation in the attestation of the *adjuncts* of the fact, does not always invalidate their credibility as to the *substance* of the fact ; for the completion of an action, often requires a considerable space of time. One witness may have observed it in its beginning, another in a middle period, and a third, towards the end : consequently, all may not have observed the same adjuncts. Thus in the case No. 602, two regiments might have pursued the enemy in the beginning, and three at the end of the conflict ; thus the two demoniacs mentioned in the Gospel of St. Matthew, chap. 8, and of St. Mark, chap. 5, might have been successively cured.

608. Matthew may have observed both cures, others, only the last. But if the action were instantaneous, and the result not notorious, then it seems to me that a variation in testifying the adjuncts of the fact, would affect the substance, and, if the witnesses were equally credible, render their testimony doubtful.

609. A

609. A variation in the attestation of the *circumstances* of a fact, does not affect the credibility of the witnesses, as to the *substance* of that fact: for their attention being principally directed to the substance, mistakes may arise as to the *time*, and often even as to the *place* and *manner*, which are of little importance.

610. From what has been thus stated, it follows that variant witnesses, may in some points be considered as *concordant*, and their testimony jointly calculated; in other points, as in No. 606, as *contradictory*; and in others, as merely *discordant*, but not opposite, and their credit separately estimated.

611. If there be several discordant witnesses, the testimony of those that agree, must be calculated, as that of concordant witnesses; and if all disagree, each must be calculated apart.

SECTION XVIII.

OF INCONSISTENT ORIGINAL TESTIMONIES.

These are either *contrary* or *contradictory* to each other, and respect either indifferent or probable facts.

Of Contrary Testimonies.

612. *Contrary* testimonies consist of assertions equally general, or equally particular; whereof the one denies what the other asserts, or as logicians call them, that agree in quantity, but disagree in quality.

613. Thus if one witness asserts, that *all the Turks were put to the sword at the taking of Ismail*; and another asserts, that *none of the Turks were put to the sword on that occasion*; both these assertions cannot be true, but both may be false; for some Turks may have been massacred, and some not; or one may be true, as *that all were massacred*, and the other false, *that none were massacred*.

614. If

614. If both assertions were *particular*, as that *some were put to death, and some not*, they may be both true, or one may be true and the other false, though incompletely. Thus, if all were massacred, it were false that some were not massacred, and the assertion that some were massacred would be true, but incompletely.

With respect to Indifferent and Neutral Facts.

615. *General* assertions of two witnesses of *equal credibility*, contrary to each other, destroy each other, and no judgment can be passed upon them.

616. But if their *credibility be unequal*, the testimony of the most credible of the two witnesses, is diminished by the opposition of another, though less credible. And to find to what degree, let the chances favourable to the credibility of the most credible, be multiplied into the deficiencies of the least credible, and let this product be the *numerator* of the fraction; then let the deficiencies of the most credible, be multiplied into the chances favourable to the credit of the less credible or

Y 3

the,

the two witnesses, and let both these products, added to each other, form the *denominator* of the fraction that exhibits the remaining credibility of the most credible of the two witnesses.

As in the following formula,* the separate probability of each of the two witnesses being estimated and marked,

Let the chances favourable to the credit of the most credible of the two witnesses be a , and his deficiency $=a'$;

Let the chances favourable to the credit of the less credible of the two witnesses $=b$, and his deficiency $=b'$;

Then $\frac{ab'}{ab'+a'b}$ = the credibility remaining to the most credible of the two witnesses.

To find how much the credibility of the testimony of the *less credible* of the two witnesses is diminished by the opposition of *the most credible*, the formula is $\frac{ba'}{ba'+b'a}$.

617. Thus if one attending physician says his patient labours under a disorder in the lungs, and another, of lower repute, asserts the

* See 1 Lofft's Gilbert on Evidence, p. 294, &c.

disorder

disorder to be seated in the liver ; here is an *indifferent* fact ; for, to all unskilled in medicine, one appears as probable as the other ; and the assertions are contrary, though not contradictory, for both may be false.

Then let the credibility of the first, whom I shall suppose the most credible, $= \frac{9}{10}$, and that of the least credible $\frac{8}{10}$; then the chances favourable to the assertion of the first physician are nine, and those unfavourable to that of the second physician $= 2$; then $9 \times 2 = 18$ is the numerator of the fraction. The chances favourable to the assertion of the second physician are 8, and the deficiency of the first physician $= 1$, and $8 \times 1 = 8$; then $\frac{18}{18+8} = \frac{18}{26}$, is the remaining credibility of the assertion of the first physician $= \frac{9}{13}$; so that his credit, by means of the opposition, is on this occasion considerably reduced, viz. from $\frac{9}{10}$ to nearly $\frac{7}{10}$. And by the second formula, the credit of the testimony of the second physician, is, by the opposition of the first, reduced to $\frac{4}{13}$, for $\frac{8 \times 1}{8 \times 1 + 2 \times 9} = \frac{8}{8+18} = \frac{8}{26} = \frac{4}{13}$, and consequently below credibility.

Y 4

618. If

618. If in the case of the physicians above mentioned, the assertion of the first physician were opposed by the *concordant* assertions of two physicians, whose respective credibilities were $\frac{8}{10}$, we must find the combined credibility of the concordant assertions, as in No. 583, and then compare the result with the credibility of the first physician. .

Now the combined credibility is $8 \times 8 = 64$, and $2 \times 2 = 4$, then we have $\frac{64}{64+4} = \frac{64}{68} = \frac{32}{34} = \frac{16}{17}$; thus we see their joint assertion is somewhat more credible, than the assertion of the first physician; for, $16 : 17 :: 9, 411, \&c. 10$.

619. What has been said of the different opinions of physicians, may be observed also of the opinions of lawyers, and other varying reports, made by persons skilled in subjects not generally understood by the public.

With respect to Probable Facts,

620. If the credibility of the witnesses that oppose each other be equal, two opinions may be held; first, that these testimonies destroy each other, and secondly, that the affirmative

affirmative testimony, coinciding with the probability of the fact, should on this occasion be preferred to the other. The first opinion, however, seems to me the juster; for if the first testimony were preferred, and the fact thus established, the opposite testimony would be of no effect, which is absurd; for, then it might as well not exist. It seems therefore, that in this case, the fact remains as if unattested, and can be maintained only by its internal probability.

621. But if the credibilities of the witnesses that oppose each other, be *unequal*, the resulting probability of the fact may be found by the following formula.

622. Let the chances favourable to the probability of the fact $=b$, and the unfavourable $=b'$;

Let the chances favourable to the credit of the witness who *affirms* it $=a$, and his deficiency $=a'$;

Let the chances favourable to the credit of the witness who *denies* it, $=n$, and his deficiency $=n'$;

Then the resulting probability of the fact

$$= \frac{ban'}{ban' + b'a'n}$$

Thus

Thus if the probability of the fact be $\frac{9}{10}$, and the credibility of the witness who affirms it $\frac{8}{10}$, and of the witness who denies it $\frac{7}{10}$, then we have $9 \times 8 \times 3 = 216$, the numerator of the fraction. And $1 \times 2 \times 7 = 14$, added to $216 = 230$, the denominator of the fraction $= \frac{216}{230} = \frac{108}{115} = \frac{27}{29}$ nearly, or more exactly, $\frac{27}{28.75}$, which exceeds the original probability of the fact by a small fraction; for $27, 28, 75 :: 9, 38.10$.

623. Thus we see, the results must vary according to the various probabilities of the object, and the various credibilities of the affirming and opposing witnesses.

624. What is here said of probable *facts*, may also be extended to probable opinions, supported and denied by unequal authorities,

It is well observed by Dr. Marsh, in his notes on Michaelis, vol. iii. p. 8;

“When we have certain knowledge of the existence of a fact, as that of an engagement between two armies, no contradictions in the accounts of that fact can disprove the existence of the fact itself. But when the question is in agitation, whether an alleged fact be
true

true or not, our *conviction* of the truth of it, will certainly be affected by the concurrence or contradiction of the testimonies in its favour. And if the contradictions are such, as to be wholly incapable of a reconciliation, the proof of the fact will certainly not be so satisfactory, as it would, if the witnesses agreed. But since not every deviation is a contradiction, and the same fact, as viewed by different persons in different lights, not only may, but must be reported by them in different ways; we must examine, whether the deviations are such, as may be explained on this principle. If they are, and the witnesses are in other respects credible, we have no reason for refusing our assent. Further, we must distinguish variations, in respect to concomitant circumstances, from variations in respect to the main fact; for the former are of much less importance than the latter."

With respect to Improbable Facts.

625. If *affirmed* and *denied* by the same number of witnesses *equally* credible, their improbability remains unaltered, as said, No. 620.

626. But

626. But if the credibilities of the opposite witnesses be *unequal*, the resulting state of the fact may be found by the formula No. 622.

With respect to contradictory Original Testimonies.

627. The credibility of these is calculated as that of contrary testimonies; the only difference is, that one must be true; and the other false, whereas contrary testimonies may be both false.

628. The method recommended by Mr. Hume, in his Essay on Miracles, p. 344, 345, for comparing and balancing contradictory testimonies, consists in deducting the *inferior* credibility from the superior; the remainder, he says, will show, how much the superior is weakened. If so, this absurdity would follow, that the credit of the most respectable witness would be destroyed by the opposition of one whose credibility is doubtful; for, suppose the credibility of the one to be $\frac{9}{10}$, and of the other only $\frac{5}{10}$, then $\frac{9-5}{10} = \frac{4}{10}$, which being
below

below $\frac{1}{2}$, denotes improbability, or incredibility. In the above case, the credit of the first physician would by such subtraction be reduced to $\frac{1}{10}$.

SECTION XIX.

OF SUCCESSIVE OR TRANSMITTED TESTIMONIES.

629. If *A* relates to me a fact, which he heard from *B*, and that *B* heard it from *C*, and that *C* heard it from *D*, and that *D* was the immediate witness of the fact, here is a fact conveyed to me through four witnesses; but there is but one witness to the fact, namely *D*. And besides this *principal* fact, there are three distinct *subordinate* facts, namely, that *D* reported it to *C*, that *C* reported it to *B*, and that *B* reported it to *A*; each of these can attest no more, than his own reception of the fact, from the next preceding witness, and of the persons through whom he was informed it was conveyed.

Hence it is plain, that the aggregate
credibility

credibility of these witnesses cannot be calculated like that of simultaneous witnesses, by multiplying the chances, favourable to the truth of each, into each other, as in No. 583; for there all the testimonies were supposed to bear upon one fact, but here they all relate to different facts, namely, their several receptions of the principal fact. Let us suppose the *general* credibility of each of these witnesses be known, and to be, for instance, $\frac{9}{10}$, then I have $\frac{9}{10}$ of a certainty, that *A* received the report from *B*; but though the general credibility of *B* is also supposed to be $\frac{9}{10}$, yet that he received this report from *C*, I have only the probability of the $\frac{9}{10}$ which I received from *A*, that is, $\frac{9}{10}$ of *B*'s $\frac{9}{10}$. For, if *B* made the report immediately to myself, I could have no greater probability of its truth, than $\frac{9}{10}$ by the supposition; and it were absurd to suppose, I could have the same portion of certainty, when I knew it not by my own senses, as if I had so received it.

630. Hence, the rule is to multiply the fractions, indicating the general credibilities of

of each of the successive witnesses into each other; the product gives the aggregate credibility of all the witnesses.

631. As the credibilities, thus found, continually decrease, it is needless to push the calculation further than the point at which the aggregate becomes *doubtful*; that is, equal $\frac{1}{2}$: this point, if the credibility of each of the witnesses be supposed equal, (for instance $\frac{9}{10}$,) is found without tedious multiplications, by dividing the given credibility by its deficiency, and multiplying the quotient into $\frac{7}{10}$; thus the original credibility being $\frac{9}{10}$, it is not rendered doubtful, until it is transmitted through six witnesses; for the deficiency of $\frac{9}{10}$ is 1. and 1) 9 (9 and $9 \times \frac{7}{10} = 6, 3$.

632. If the original testimony of each of the succeeding be $\frac{8}{10}$, it requires only a succession of three witnesses to render it doubtful; for the deficiency is 2 and 2) 8 (4 and $4 \times \frac{7}{10} = 2, 88$, and in effect $\frac{8}{10} \times \frac{8}{10} \times \frac{8}{10} = \frac{512}{1000}$.

633. If the credibility of the original testimony were $\frac{99}{100}$, it would become doubtful only
by

by 72 transmissions, and if it were $\frac{999}{1000}$, it would require a succession of 699 witnesses, to render the credibility doubtful.

634. If in the relation of *modern* facts, the original witness is not named or unknown, and the fact such as should not be presumed, or is destitute of internal probability, it seems to me, that the succeeding relaters of the fact are not entitled to any credit.

635. But it seems otherwise as to the relaters of antient facts, as many antient testimonies are irrecoverably lost, in which the original witness might have been mentioned.

636. If any of the successive witnesses are of dubious credibility, or through *credulity* unworthy of credit, the whole chain is interrupted, and the succeeding witnesses destitute of support.

637. If any of the successive witnesses should vary from the preceding, or the original testimony, by the addition or subtraction of some circumstances, yet this does not alter his credibility as to the substance of the fact. See No. 602, &c.

638. From the weakness and continual decrease of successive testimony, some have
inferred,

inferred, that even the object testified might become *dubious*, or even improbable; but falsely; the utmost that can be inferred is, that it may be left destitute of *external* testimonial proof, but its *internal probability* remains unaltered; and in many case, this is sufficient to prove its existence. This always happens, when the present state of any object is evidently the consequence of some past fact. Thus, if we had no human testimony of an universal deluge, the confused heaps of marine shells frequently found in all countries, on the summit of high mountains, as well as a few feet under the actual surface of the earth, would sufficiently prove it. If we had no account of the conquest of Gaul by the Franks, or of Spain by the Moors, yet the mixture of Teutonic words in the modern French language, and of Arabic in the Spanish, would sufficiently prove these facts, to say nothing of medals and other monuments.

639. The above observations relate to a *single* chain or series of successive witnesses; but if there were two or more *collateral* series of successive witnesses of an indifferent, or

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probable,

probable, or even an improbable fact, sufficiently credible and independent on, and yet agreeing with each other, their credibility could never become dubious, from the improbability, that their agreement could arise from any thing else but the reality of the object testified. This improbability is as the product of their deficiencies, divided by the product of the chances favourable to their credit. Thus, if the credibility of the original witnesses in each series be $\frac{8}{10}$, and if there are two collateral series of concordant witnesses, the deficiency of each original witness will be two, and the chances favourable to the credit of each, eight; the improbability of their agreement from any other cause, but the reality of the object will be $\frac{2 \times 2}{8 \times 8} = \frac{4}{64} = \frac{1}{16}$; and if there be three such series, the improbability will be $\frac{1}{64}$, &c.

SECTION

SECTION XX.

OF WRITTEN TESTIMONIES.

640. Hitherto we have considered successive testimonies in the abstract, and the conclusions laid down relate chiefly to *oral* testimonies; but the credibility of testimonies committed to writing, is vastly stronger, because not only the original witness has more leisure to weigh his account, and render it more accurate, and his testimony may be preserved, without any alteration, at least one hundred years, and often three or four hundred years; but also, because within that space of time, innumerable copies of it may be taken, and if taken, it is scarce possible, that in the greater number of them, any material error can be committed, or at least, that the same should be found in all of them; if any such be committed, it would easily be corrected by reference to the original.

641. Hence if the credibility of a written testimony be $\frac{9}{10}$, the credibility of the first

Z 2

copy

copy is not barely $\frac{9}{10}$ of that $\frac{9}{10}$, but approaches very nearly to the credibility of the first testimony; and the reason is, that the existence of the first testimony being permanent for a number of years, its agreement with the copy may be frequently examined and ascertained, and if important, the comparison will undoubtedly be often made; whereas oral testimony being fugitive, its existence can be proved only by the credibility of the second witness, and the existence of this, only by a third witness, &c. The credibility of the copy is, therefore, to be deduced from the probability of its agreement with the original, which in material points, except party zeal interferes, is indefinitely great.

642. If there are two or more original written testimonies, concordant in all material points, and copies are taken of each, and these copies are found to agree, at least in substance, their credibility with respect to the object testified, is nearly equal to the concordant original testimonies: the same observation extends to all the successive copies, and the more numerous they are, the more they strengthen each other.

643. The

643. The true reason, why the copy of a deed, whose conformity with the original is well attested, is refused to be received as a proof in our courts of justice is, that withholding the original, when it can be produced, induces some suspicion of fraud; for if the original be proved to be lost, or accidentally destroyed, the production of a copy is allowed.

Of Illusive Probability.

644. Under this head I comprehend every imaginary probability, derived from sources that have no connexion with the reality of the object supposed probable, originating from *hope, fear, hatred*, or some other strong passion. That such illusions should exist, is indeed surprising, yet daily experience may fully convince us, that we most readily believe what we wish to be true; or, at least, we believe it more firmly than we should, if we were less interested in its truth, or had wished it to be false. We find a degree of pleasure, in contemplating the object and the reasons favourable to its existence, and of pain, in

Z 3 contemplating

contemplating those that destroy this impression. Hence, these last, are either overlooked, or slightly surveyed; the former of course prevail, and the object appears probable.

645. On the other hand, when a danger apprehended is inconsiderable, and our imagination alarmed, though its probability may be remote, or inconsiderable, fear collects, and attaches our attention to the unfavourable chances only; we become incapable of balancing them with the favourable, and the danger is consequently magnified much above its real limits. Under the dominion, therefore, of intruding passions, we can form no true estimate of probability.*

* See 1 Search, p. 291, and 328; and Leland Deist. Writers, Letter XI. p. 176.

SECTION XXI.

OF THE POSSIBILITY OF DENOTING THE DEGREES
OF PROBABILITY AND CREDIBILITY BY NUMBERS.
RULES FOR THE NOTATION OF CREDIBILITIES, AND
THE ADVANTAGES RESULTING FROM SUCH NO-
TATION.

646. It is allowed, that the chances on dice or cards, and consequently the probability of any event relating to them, may be ascertained with the greatest accuracy, as the numbers, favourable and unfavourable, are accurately known; but it is thought by many, that the estimation of the events of common life, and of the credibility of witnesses in numbers, is impossible; because, we have no standard measure, wherewith to compare them, no units, from whose repetition a number can arise; consequently, that all precise estimation must be arbitrary, and therefore useless.

647. Nevertheless, it should be observed, that all measures were originally arbitrary, and became fixed, only by convention and
Z 4 agreement.

agreement. Thus *a foot* is a conventional quantity, arbitrarily fixed upon, and without any determinate foundation in nature, and therefore different in different countries. The same may be said of *weights*, and of measures of capacity, as *pints* or *gallons*; and of measures of qualities, as of *heat*, *cold*, *wet*, *dry*, &c.: in the same manner, probability and credibility are real, though invilible quantities, of which there are different degrees, which have their foundation in nature; for probability is founded on the number of cases in which an event happened, compared with the whole number in which it happened and failed, in circumstances substantially the same. And in the same manner, credibility is grounded on the experience we have had, of the qualities of a witness, requisite to render his testimony more or less credible. Thus, we every day say, that some events, some arguments, some opinions, are more probable than others; that one is *highly* probable, another *scarcely* probable, another *doubtful*, another *improbable*; and we are convinced, that the testimony of Bergman is more credible than that of Paracelsus, &c.

Still

Still it may be replied, “ that of sensible quantities or qualities we may have sensible measures, but of invisible quantities, such as the different degrees of probability respecting human events, or of credibility, knowledge, integrity, &c. we can have no determinate measure, by which to estimate their inequality.” Yet the contrary is well known; the ratio which the value of any thing bears to the value of any other thing, is an invisible quantity, which is settled, merely by the estimation of the parties concerned; thus, the value of a horse may be deemed *superior* or *equivalent* to that of a certain number of cows or sheep, &c. a number settled by estimation. For the convenience of all parties, this value is estimated by certain quantities of coin, and thus money becomes the standard, to which all valuation is referred. Now, the different degrees of probability, are equally referable. and, in fact, are daily referred to that standard, by insurers, whether of lives, or houses, or voyages, &c. grounded on experience of the number of times the event insured has happened or failed, in a certain number of years. A jury may settle the
the

the degree in which they hold a witness credible, and this is better than yielding to a majority.

648. There are many quantities, the ratios of which, to other quantities, cannot be ascertained, yet approximations thereto are highly useful. Thus the ratio of the diameter of a circle to its circumference, cannot be exactly stated, yet none will deny the utility of approximations towards it.

649. The merit of painters has been deduced from the degrees of excellence which they have severally attained, in the different parts of that art, expressed in number, as *design, colouring, expression, and composition*, multiplied into each other. See Mem. of the Roy. Acad. of Paris, for 1755.

650. The principal advantages arising from a specific notation of the degrees of probability and credibility, are,

First, that it fixes the vague distinctions which we naturally make of these degrees, renders them more precise, and thus enables us to deduce conclusions, otherwise unattainable. For instance, we may conclude that, in some cases, the testimony of two doubtful witnesses

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is more credible than that of one witness of low credibility. See No. 590, &c. And that the opinions of two physicians or lawyers of inferior note, may possibly be preferable to that of one eminent in either of those professions. No. 618. And this observation may be extended to many cases, that occur in common life, unless some passion or partiality interferes; for when that happens, no certain estimation of probability can be had.

Secondly, it enables us to strike a balance betwixt opposite probabilities, or testimonies, and shew with precision, which of them is preponderant, and by how much.

Thirdly, as in a course of years we ourselves change our opinions, calculation may shew us the precise weight of the proofs or causes, that induced the change.

651. Solidity of judgment consists chiefly in the just estimation of probabilities, and when the requisite *data* are known, it is seldom that any mistake can occur; but in many cases, these are difficultly procured. *take*

652. To help to form an estimate of the credibility of witnesses, whether known to us, or absolutely unknown, I have formed the following

following scale; which, if judged defective, may be amended by others.

<i>Unknown</i> , and of the lowest class				$\frac{12}{20}$
Ditto, sworn	-	-	-	$\frac{14}{20}$
<i>Unknown</i> , but of superior condition,				$\frac{14}{20}$
Ditto, sworn	-	-	-	$\frac{15}{20}$
<i>Known</i> and credible	-	-	-	$\frac{15}{20}$
Ditto, sworn	-	-	-	$\frac{16}{20}$
More credible	-	-	-	$\frac{16}{20}$
Sworn	-	-	-	$\frac{17}{20}$
More credible	-	-	-	$\frac{17}{20}$
Sworn	-	-	-	$\frac{18}{20}$
Still more credible	-	-	-	$\frac{18}{20}$
Sworn	-	-	-	$\frac{19}{20}$
Of the highest credibility	-	-	-	$\frac{19}{20}$

and this is not increased by an oath.

653. In affigning to any person a particular degree in this scale, it is plain, that regard should be had to his age, education, rank in life, and general character, besides the general qualifications mentioned No. 445, &c.

654. The

654. The credibility of the opinion of a professional man, is in general as his repute or situation, if fairly obtained. Yet there are numerous exceptions to this rule. Many, of the highest merit, either through bashfulness, or indolence, or contempt for certain artifices, have never acquired that celebrity, to which their acquirements entitled them. For instance, in the medical profession, the late Dr. Black ; and in the legal, Serjeant Hawkins, who was named, from his want of practice, the *briefless Serjeant*.

655. But the opinions of professional men, can seldom be as credible as the testimony of a credible witness to a fact, and commonly only in very clear cases, being for the most part conjectural. Hence I estimate the opinions of persons of the highest repute, at from $\frac{16}{20}$ to $\frac{18}{20}$, and those of lower repute, at from $\frac{13}{20}$ to $\frac{16}{20}$.

SECTION

SECTION XXII.

OF THE PROBABILITY, MERIT, AND DEMERIT OF
HUMAN ACTIONS.

656. When men are free from physical constraint or restraint, their actions are the results of the actual constitution of their minds, and of the general motives that influence the human will, modified by circumstances peculiar to each case.

657. The actual constitution of the mind consists in its previous dispositions, arising, partly from natural temper, partly from education, partly from preconceived opinions, habits, company, age, observation, and experience.

658. The motives that generally influence the will, are natural instinct and passions, whether selfish or moral, benevolent or malevolent; their energies are various, in different individuals, and in all modified by the presence or distance of their objects, and the facility, or difficulty, or danger to be encountered

tered in attaining them. Distant views are, indeed, generally attributed to *reason*, in contradistinction to *passion*; yet, in reality, reason does no more than discover the importance of the object, and the means of pursuing or avoiding it; the true principle or motive of its pursuit or avoidance, is the passion it excites.

659. Motives of any particular tendency are often so complicated with those of an opposite tendency, that the agent himself hesitates, which of them he shall obey; much more must those, who attempt to conjecture what his determination shall be.

660. However, if the actual constitution of the mind, and the general habitual motives of its actions were known, the resulting determination, might in most cases be inferred, to a great degree of probability. As on a die, having 99 faces marked with an ace, and only one with a deuce, we must judge the turning up of an ace most probable.

661. This almost constant connexion of human actions, with particular known motives, has been, by many, confounded with necessity, but, in my opinion, very unjustly;
for

for a being cannot be deemed to act through necessity, whose choice is, in all cases, directed by what he himself thinks best, while there is scarce any motive, which may not, in some point of view, be thought best ; or, if to him apparently equal, the very necessity of making some choice, is sufficient to chuse in conformity to one or other.

662. And though an absolute certainty of the determination be unattainable by any but Him who reads all hearts, yet in simple cases, experience and observation inform us, that a very high degree of probability may be obtained.

663. As human actions may be traced from a knowledge of the mental constitution of the agent, and of the motives by which he is generally governed, so the motives may themselves be discovered, by a knowledge of the constitution of his mind, and of the actions produced by him ; so that any two of these being known, the third may be fairly inferred.

664. The merit of an action consists in its conformity to moral law, in opposition to all occurring difficulties, and under the guidance of proper motives.

665. Demerit

665. Demerit, on the contrary, or guilt, arises from a wilful breach of that law, through the influence of motives, of whose malignity the agent is conscious, or may and ought to discern.

666. Hence it frequently happens, that as the merit or demerit of actions depend chiefly on the motives, from whence they originate, not only the action, but also the previous mental constitution or character of the agent, and the circumjacent circumstances, should be fully considered, before the intention or motive, and consequently his guilt or innocence, can be determined.

667. In many cases, however, the act itself naturally suggests the probability of a depraved motive, and constitution of mind; and consequently requires a justification on the part of the agent, as may thus be shewn.

668. *Guilt* consists in a wilful transgression of a known moral law ; a law in most cases known to all mankind ; its knowledge in particular cases, may therefore be presumed, that is assumed as *certain*, until the contrary appears. In the same manner, human actions, being seldom the effects of constraint, must

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be deemed *wilful*, until proved not to have been so. Now, all actions proceeding from the will of an agent duly informed, being the results of some motives, those motives that induce a wilful transgression of the moral law, must themselves be incompatible with that law, or at least be deemed so, until the contrary appears.

This subject is well illustrated by Mr. Capel Lofft, in his *Law of Evidence*, vol. ii. p. 879, 4th edition; which, as *his* illustration relates to a matter of the greatest importance, and of universal concern, I shall here set it down in his own words.

“ Prima facie, nothing in the general consideration of the fact at large, can justify one man’s killing another, under the protection of the same laws.

“ The malice therefore, is in the fact itself, without justifiable cause shewn, or a legal excuse; and this will be according to the circumstances proved, if ‘ the evidence is of killing without provocation,’ (and it lies on the defendant to shew such provocation as the law allows in excuse,) no particular malice, as we have seen, needs to be proved;

proved ; but, if the defendant prove a provocation by assault for instance, of the deceased, the presumption against him from the act of killing, is now *rebutted*, until the prosecutor shew that such provocation was sought maliciously as a colour ; so where the evidence tends to prove ‘ the killing an officer,’ or that the party ‘ who killed,’ was committing an unlawful act, and that death ensued to somebody on that action ; or, ‘ if the act’ appears deliberate, ‘ naturally’ tending to the personal hurt of any one, ‘ and presumably to death ;’ in these ‘ several’ cases the law implies the circumstance of malice, ‘ disprovable by various evidence, according to the general or special facts which support it ;’ and this implication of the law is in defence of mankind : for all *malice* (‘ which in the legal sense is a *disposition to do an unlawful act,*’) is a secret quality of the mind : and it is the fact only that appears, and can be brought in proof ; and it is from the circumstance of the fact, that a man must collect the offence of the mind, ‘ and the legal degrees of that offence :’ now, when a man kills another, that is, *prima facie*, so ill-natured and

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bloody

bloody an action, that it is presumed to be malicious, 'till the contrary be proved;' and therefore, the 'apparent' offender, to cover himself from the supposition that the law has made in tenderness to mankind, must shew some 'just necessity,' some 'provocation,' or some accident, in "justification, extenuation, or excuse of the fact;" or, if he cannot thus mollify or excuse the action, the supposition of the law remains, and he ought to be punished with certain death."

CHAPTER VIII.

SECTION I.

OF AXIOMS, MAXIMS, AND APHORISMS.

669. *Axioms* are universal propositions, whose truth, when the terms which express them are understood, is self evident.

Thus the axiom, *whatever is, is*, every one who understands the import of the words *whatsoever*, and *is*, instantly perceives to be true;

true; but these terms being abstract, their signification is not immediately perceived by children, nor by persons in a state of mental imbecility.

670. Mr. Locke, lib. iv. chap. vii. sec. 10, is partly right in denying, that they are the principles or foundations of our knowledge; for, from many of them, no conclusion can be drawn; as, for instance, from that here quoted; yet there are others, from which conclusions may fairly be deduced. Thus, if a definition of any being be agreed upon, properties included in, or excluded from that definition, may justly be inferred or denied, as the case may be, from the principle that *it is impossible to be and not to be at the same time, and in the same respect*. Thus, if it is allowed that God may be defined to be a being, infinitely perfect, and that *veracity* is a perfection, we must conclude, that veracity is ascribable to God, otherwise he would not be infinitely perfect, and consequently *would be and not be* God, which is impossible. In the same manner, the unity of God may be proved, and thus also all imperfections are excluded from his nature.

671. In *geometry*, frequent use is made of axioms; Euclid lays down several, and on them rests the final proof of his demonstrations.

Care must be taken, that axioms be properly understood. Thus, that *the whole is equal to its parts collectively taken*, is evident, when it is understood that none of these parts include the other, as is the case in continued quantity; but if any of these parts include the other, (as in numerals) it is false; thus 7 and 8 are parts of 12, but as 8 includes 7, these numbers, taken together, exceed 12, since they amount to 15.

672. *Maxims* and *aphorisms*, are also general truths, but not self evident. In *experimental sciences*, they are summaries, or final results, from numerous facts, and are highly useful, as from them, several new facts may often be deduced by analogy. In *speculative sciences*, as metaphysics, theology, morality, jurisprudence, logick, &c. they are either the principles, or the immediate and most general inferences, from the principles of those sciences. Thus in *theology*, from the principle, that veracity is one of the attributes of God,

God, it is inferred, that whatever God reveals is true; and, that *any proposition confirmed by miracles, is either mediately or immediately, (as the case may be) revealed by God*; on these maxims, both the Jewish and Christian religions are founded. So in *logick*, that *things that are in any respect the same with, or equal to another, are in the same respects the same with, or equal to each other*, is a maxim, on which all reasoning is founded; and demonstrations *ab absurdo*, on the maxim that of two contradictory propositions, if one be false, the other must be true. So in *chronology*, and *criticism*, certain *canons* or maxims are established, by the application of which, many facts are ascertained, or rejected, &c.

673, Locke also well observes, that axioms and maxims being well understood, and rendered familiar, are very convenient in ratifying and as it were sealing the conviction of some particular truths, which are shewn to agree with them, and are less familiar, and in fact not originally derived from them.*

SECTION

* In the 11th section of the chapter above quoted, he uses the word *revelation* in a new, and therefore improper sense, saying, that when we find out an idea, by whose

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intervention

SECTION II.

OF SOME GENERAL DEFINITIONS,

674. To *understand*, is to discern a relation ; thus to understand words, or terms, or propositions, is to discern their signification. To understand a language, is to discern the signification of its words and idioms. A relation is *perfectly* discerned, when its subject, term, and foundation, are known ; but *imperfectly*, if only the subject and term, or only the subject and foundation are known.

675. To *know* a thing, or the truth of a proposition, is to judge it on proper motives to be true, or to be convinced of its truth. To know a science, is to discern the truths, and the foundations of those truths, which it

intervention the connexion of two others is discovered, this is a *revelation* from God, by the *voice of reason*. What he adds of revelation by the voice of the *spirit*, is mere cant, which, from the bigotry of the times, he was obliged to chime with ; and what he says of reason, being a revelation, he contradicts, lib. iv. chap. xviii. sec. 2,

contains,

contains. Thus, to know a fact, is to judge if it be true, either on the testimony of our senses, as having witnessed it, or by consciousness or demonstration, or on other indubitable testimony ; thus I know my own perceptions by consciousness, the truth of the propositions of Euclid by demonstration, and that there was such a king as William the Conqueror, such an emperor as Augustus, &c. by indubitable testimony. Hence knowledge and certainty are nearly the same ; knowledge denoting judgment or conviction, and certainty the reliance or assurance of the truth of that judgment. However, knowledge founded on any foreign testimony is *indirect*, and more commonly called *belief* ; yet, may I not say, *I know the sun rose many years before I was born*, or that I had an ancestor 2000 years ago ?

676. To *conceive* a thing, is to form an idea or an adequate notion of it. Thus if any thing be explained or described to me, if I can form an idea or adequate notion of it, I may say *I conceive it*. So if I read a description of London, and from that description I can form an idea of it, I may say *I conceive what sort of town it is* ; but I
cannot

cannot conceive a triangle, one of whose sides is equal to the other two, for I can form no idea of such a triangle.

677. These three terms are frequently used indiscriminately, in common language, and even in philosophical disquisitions; which occasions much confusion. Thus a person is said to *know* a language; whereas, it would be more proper to say, he *understands* a language. Some propositions may be imperfectly understood, which can by no means be conceived. Thus when it is said, that the world was created, the proposition may be understood, otherwise it could not be affirmed; but it cannot be conceived, as of the power by which it was effected, no adequate notion can be formed.

SECTION III.

OF GENERAL LOGICAL AND PHILOSOPHICAL MAXIMS.

678. *All terms are more or less intelligible, whose signification is more or less perfectly known.* Thus, men blind from their nativity, may

may nevertheless form some notion, though not an idea, of light and colours; since Drs. Saunderfon and Moys, who were thus circumstanced, have been enabled to give lectures on opticks, and certainly knew more of the properties of light and colours, than the generality of mankind, See 370. Thus, terms denoting *sensible* objects, or other states of the mind, known only by *consciousness*, or by *intimate conviction and reason*, as the existence of our own mind; or by *analogy*, as the existence of other minds; or of *privations*, as darkness, blindness, silence; or of *negations*, as impossibility, non-existence, annihilation, nihil, or nothing: or complex terms, that denote an *unknown object, together with a known relation to a known object*, or to an unknown state of a known object, are also intelligible; thus $x+1=\sqrt[3]{2}$. Here x is an unknown quantity, and $x+1$ is a complex term: $=$ denotes the relation to the known quantity 2, as does the cubic root the unknown amount of a particular intelligible state of that complex term, or terms that denote the *unknown causes of known effects*, as *force, attraction, electrical or magnetic powers, &c.*

679. Terms

679. *Terms that denote a known fact, though connected with an unknown cause or circumstances, are perfectly intelligible, as nutrition, vegetation, secretion, electricity, magnetism, &c.*

For we cannot deny *general and well-known* facts, of which there must be some mode of causation, (nor consequently deny understanding the meaning of the terms that express such facts, together with their unknown mode of causation,) merely because we are ignorant of the immediate or general causes of those facts; or how, or in what manner, or by what degrees, or for what end, they operate; or of the preceding or concomitant circumstances. An American savage cannot understand how Europeans convey their thoughts to one another by writing, and yet many of those savages are well acquainted with that fact.

680. *Complex terms that express what is evidently repugnant, (as a round square,) are unintelligible; for the signification of the one is incompatible with the signification of the other. Such terms may be called repugnant. (So Berkeley, Min. Philos. Dialogue 7, sec. vi.) and Mem. Berl. 1789, 429.*

681. *Simple*

681. *Simple or complex terms, to which an unintelligible signification is affixed, may also be denominated unintelligible; thus the internal mould of Buffon, is a complex unintelligible term. So also the Archeus of Stahl, and the substantial forms of the peripatetics.*

Such terms may also be called *senfeless*, and the *potentia animastica* of Borelli, lib. ii. de vi percussionis. See 1 Baxter 23.

682. *Complex terms that denote somewhat physically impossible, are intelligible, but not those that express a metaphysical or mathematical impossibility. Thus we understand what is meant by perpetual motion, or the philosophers stone; for the impossibility of these arises merely from their inconsistency with the laws of corporeal nature, which the Author of nature may suspend or vary. But metaphysical or mathematical impossibilities, imply a contradiction; such as a mortal and unjust God, a triangle, one of whose sides is as long as the other two, &c.; these also may be called repugnant.*

683. *Terms to which no signification, whether direct, or analogical, or relative, is affixed, are of course*

course unintelligible, and may be called senseless, as Blytre.

684. *A proposition, whose extremes (that is, whose subject and predicate) are intelligible, may be either true or false, intelligible, or unintelligible.* Thus a proposition asserting that men are mortal, is true, though they may be rendered immortal by Divine Power; and so a proposition asserting a natural or physical impossibility is false; as that a dead man may be restored to life, by barely commanding him to rise; though, by supernatural power, this may be effected: but a proposition, asserting what is clearly discerned, to be either metaphysically or mathematically *impossible*, seems to me to be, not only inconceivable, but also unintelligible, as that *God is unjust*, or that *he is the author of moral evil*. Though the terms expressing the subject and predicate, are perfectly intelligible; and the reason is, that their connexion cannot be understood, as they exclude, and are incompatible with each other; and their connexion being utterly unintelligible, the proposition must be so too; as to an affirmative proposition, a copula or connexion is essentially requisite: without that, it is not

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a proposition, and an unintelligible connexion is the same as none at all. So in mathematics, the assertions that *a part is equal to the whole*, or that *if from equals you take equals, the remainder shall be unequal*, are unintelligible; but it is said, an unintelligible proposition can neither be affirmed nor denied; whereas, the above assertions are denied. The answer is obvious; a proposition unintelligible, because either its subject or predicate, or both, are senseless, cannot be affirmed nor denied; because senseless terms are incapable of any relation, being mere empty sounds, and therefore *senseless*, as at No. 683. But propositions that are unintelligible, because one or other, or both, their extremes are repugnant, are not only false, as many perfectly intelligible propositions are, but can by no possibility be otherwise than false, and consequently can and must be denied. Their falsehood, then, is perfectly intelligible, and therefore may be affirmed; in this sense, their meaning is perfectly intelligible; for falsehood is all their meaning imports; and, for the same reason, propositions, whose copula is impossible, must be denied.

685. *Where*

685. *Where the extremes of a proposition are intelligible, and are not evidently incompatible with each other, the proposition may be true, and consequently on proper proof may be credited, though the relation that connects the extremes, is not understood, or imperfectly understood.* Thus in the proposition, asserting that the square of the hypotenuse is equal to the sum of the squares of the other two sides, the terms *square of the hypotenuse*, and those of the other two sides that form the subject of which equality is predicated, are well understood by every mathematician, though he may forget the demonstration, and consequently *not actually discern* the connecting relation of those extremes; so also another person, who has never seen this proposition demonstrated, but who understands the import of the terms, may yet believe, upon the testimony of all mathematicians, that it is true, though he does not *discern* the relation of equality attributed to these squares, nor consequently the truth of the proposition. Nay, in such case, though the relation be indiscernible by all human understandings, yet, on proper proof, its existence may be believed.

Thus

Thus in the proposition *some being is unoriginated*, the term *being* is intelligible; so also is the predicate *unoriginated*; and though the intrinsic foundation of the relation that connects them, is imperfectly intelligible, yet we know such relation to exist; for the truth of the proposition has been demonstrated *a priori* and indirectly by Dr. Hamilton, who shews that a proposition contradicting it, is necessarily false, since if no being was unoriginated, no being whatsoever could now exist; and it has evermore been demonstrated *a posteriori*; but the origination of all created beings is perfectly intelligible, as they are the terms of the relation of infinite power, which requires no subject to act upon, otherwise it would not be infinite; consequently *creation* is perfectly intelligible, though inconceivable, as it is not analogous to any of those effects with which we are acquainted.

685.^b But a fact or doctrine inconceivable, and also destitute of proof, cannot be admitted. (Proofs may be either direct or indirect), thus the causation or power of any creature cannot be admitted, being unintelligible and destitute of proof.

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686. A

686. *A proposition not understood, and consequently while so unintelligible, by the person to whom it is proposed, cannot be directly believed, or denied by him, but it may be believed or rejected by him indirectly, inferentially, that is, on proper extrinsic proof; for truth consists in the reality of the relation betwixt the subject and attribute of a proposition. Then if the signification of neither of them is known, it is plain their relation to each other cannot be discerned, nor consequently can the truth of the proposition be directly and explicitly believed. Yet where sufficient extrinsic reasons are adduced, for believing that the terms are intelligible to others, and not mere empty sounds, and that a relation betwixt them does exist, the proposition may be assented to, and thus may indirectly, and inferentially be believed. Thus, as Dr. Watts remarks,* if a skilful mathematician should tell a ploughman that an ellipse is made by a section of a cone, the peasant may believe him, though he does not understand what is meant by a cone or an ellipse. Thus also, an illiterate person who*

* P. 213.

cannot

cannot read the Bible, may yet believe it to be true, as most Christians did, before it was translated into a language they understood. Thus, Newton's Principia are believed to be true by thousands, who do not understand the various propositions they contain. This, however, is improperly called a belief of an unintelligible proposition; it is rather an admission of the unintelligible proposition, grounded on a belief, that the testimony of the persons who assert its truth may be relied on; much less can such belief be called knowledge.* See No. 368, and 370.

687. Hence (viz. from No. 684 to 685), *the MERE or bare unintelligibility of a proposition, whose extremes are not evidently repugnant, is no proof either of its truth, or of its falsehood.* For some such propositions are true; as that *the world was formed by an unoriginated being*, which is only imperfectly intelligible, the *intrinsic* foundation of the relation, connecting *being* with *unorigination*, being unknown. And others are false, as that *the world was formed by an unintelligent being*. For, as the world

* So Locke, lib. iv. Chap. xv. sec. 1.

includes intelligence, and the predicate excludes it, the relation of causation implied by the copula *formed*, is unintelligible, and destitute of any foundation, either intrinsic or extrinsic.* Therefore, in such cases we can distinguish a true from a false proposition, only by the proofs which furnish a foundation for the relation; if the proposition is deduced from known and certain facts, or from premises, whose truth is certain, it must be true, and consequently believed; but without indubitable proofs, (there being in that case no foundation for the relation of the subject and predicate,) its truth cannot be discerned, and consequently it cannot be believed.

688. *Where the terms of a proposition are INTELLIGIBLE IN THEIR LITERAL SENSE, but in that sense, repugnant to the nature of the being of whom they are affirmed, and yet are demonstrably true, in a sense bearing some analogy to the literal, though strictly inconceivable by us, they must be understood METAPHORICALLY;*

* It is not sufficient to call it *inconceivable*, for the formation of the world, even by an intelligent cause, is *inconceivable*, for want of any analogy, but not *unintelligible*.

their

their real mode of existence evidently lies beyond the extent of our faculties.

Thus many of our own mere *intellectual* states or operations, are expressed by terms borrowed from the *corporeal*, and consequently intelligible only by bearing some analogy to these last ; thus we say, we *apprehend*, we *comprehend*, we *conceive*, we *judge*, (from *judicare*, whose etymology is *iudicare*,) we *reflect*. So the words *evidence*, *certainty*, from *cernere* to decree. But of the real manner or mode in which these mental operations are formed, we can form no notion.

So also we must allow, that God possesses *knowledge*, and *foreknowledge* ; for we ourselves know, and even foreknow, many things ; but his mode of knowing or foreknowing, must differ from ours, and agree only in the effect, and is in that sense, analogous to ours ; but, in reality, infinitely more perfect, and the mode absolutely inconceivable ; so that to say he can know future events, only through the medium of their causes, as we do, seems rash and presumptuous. Can we conceive how God knows *pain* ? or even any sensation, which he can neither feel, nor form an idea

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of,

of, in the sense in which we understand those words?

689. Hence, we may believe what is certain, though connected with something inconceivable, as Descartes long since remarked, *absurdum enim esset, propterea quod non comprehendimus unam rem, quam scimus ex natura sua nobis esse debere incomprehensibilem, de alia dubitare, quam intime comprehendimus atque apud nos met ipsos experimur.* Princip. part. i. sec. xli.

690. Hence objections to the MODE of existence of an object known to exist, but not to the object itself, if any such be, may be INSOLUBLE, because the mode is inexplicable, but furnish no proof of the falsehood of some inassignable mode of existence; they merely prove, that to conceive such mode, exceeds the limits of our actual knowledge, or even, in some cases, exceeds the limits of our faculties.

691. To explain a thing, is to shew its conformity or analogy to some known truth; to explain a phenomenon, is to shew its conformity to some general law, or to assign a cause or a series of subordinate causes, of which we can form a clear and precise idea or notion, that contribute
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to its production. So Dr. Black explained the effervescence arising during the solution of limestone and of alkalies, and the causticity of lime, &c. ; Priestly, the composition of the atmosphere ; Cavendish, the formation of water, and of nitrous acid ; Scheele, the composition of vol. alkali, &c. ; Bergman, the formation of sulphurated waters ; Lavoisier, the solution of metals, &c. So to explain the mechanism of a clock, the mechanist begins by shewing, how the weights pull round the main wheel, and how that by its teeth catches hold of the next wheel, &c. and thus exhibits the series of subordinate causes leading to the motion of the hammer, which strikes the bell, and the motions of the hour and minute hands and pendulum. So to explain a word or a sign, is to shew its signification in intelligible terms.

692. *Neither truth nor evidence admit of any degrees ;* for truth consists in a perfect conformity, either of a sign to the thing signified, or of a copy to its original, and therefore is incompatible with any excess or defect. So evidence consists in a full and accurate discernment of the relation betwixt the subject

and the predicate of a proposition, or, that no such relation is discerned or discernible, if the proposition is evidently false. But *falsehood* and *probability* are susceptible of many degrees, the former deviating more or less from truth, and the latter more or less distant from certainty.

693. *Neither does metaphysical or physical necessity admit of degrees*; for what is metaphysically necessary, is absolutely impossible to be otherwise, and impossibility evidently has no degrees. What is physically necessary, cannot, consistently with the established laws of nature, be altered, or happen otherwise than conformably to them.

694. *But moral necessity sometimes, though rarely, admits of degrees*: moral necessity is only a very high degree of probability, as that of a million to one, and therefore admits of some, but comparatively exceeding few, exceptions. But in its *supreme degree*, it coincides with metaphysical necessity; thus a motive of some kind is necessary to all acts of the will. No man can prefer actual pain to actual or future pleasure, &c.

695. *Conditional necessity* is that, which is
asserted

asserted to exist in the relation of means to an end, supposing the attainment of that end to be intended. It is commonly of the moral kind, and susceptible of degrees.

696. *But liberty is susceptible of many degrees, as the difficulties of making a choice are more or less pressing.*

697. *Every judgment founded on a real relation betwixt its subject and predicate, if the judgment be affirmative, or on the impossibility of such relations, if the judgment be negative, must be true.*

For the truth of a proposition (and a judgment is a mental proposition,) consists in the agreement of its extremes with each other, if the judgment be affirmative; or in the exclusion of such agreement, if the judgment be negative: now this agreement is *real*, when it is demonstrated, or self-evident, or certain; and so also is its absence, when it is neither demonstrated nor self-evident; and still more so if, on the contrary, such relation is excluded, or proved to be impossible. But, though the reality of a relation be not evident, yet the existence of such relation may be probable.

698. *Partial, or inadequate ideas or notions*
of

of any object, furnish a sufficient foundation for reasoning, if the conclusions inferred from them extend no further than these ideas or notions, or their necessary consequences.

Thus, in *mathematics*, we may reason upon some of the properties of *figures*, without knowing all their properties, or even considering them, if they be known. So, in *natural sciences*, we may reason on some of the properties of bodies, though we cannot be said, in any instance, to know them all: for instance, we can reason on the gravity and elasticity of the atmosphere, though we are far from knowing all its properties. So in *metaphysics*, though our notions of the human soul are partial and inadequate; for the capacity of *perceiving*, and the powers of judging and *acting*, are the only with which we are acquainted; yet from these we infer its immortality, &c. So though we know but few of the divine properties, yet, on these which we do know, we may reason accurately.

699. But to morality, jurisprudence, and politics, this maxim is not always applicable; for to reason accurately on *particular* questions relative to these sciences, as different circumstances

stances may alter the rectitude of the decision, it is necessary that every such circumstance should be weighed and considered.

700. *Things that are in any respect identified with a third thing, are in that same respect identified with each other.*

Thus, a thing appearing in different states, frequently assumes different names, though in each of those states it is essentially the same ; for instance, some insects appear successively in three or four different states, and in each differ so much in external appearance, as to be denoted by different names, as *caterpillars*, *chrysalis*, and winged or *papillions*. The caterpillar is the same animal as the chrysalis, the papillion is also the same animal as the chrysalis, therefore, the caterpillar and the papillion are the same animal. So water is susceptible of three states ; first, that of *liquidity*, which in our climate is its common state ; second, that of *ice* ; and third, that of *vapour* : now, as water is essentially compounded of hydrogen and oxygen, and since in the state of ice it retains the same composition, and since vapour also retains the same composition,

it

it follows, that in that respect, ice, water, and vapour are the same thing.

701. *Things whose physical, metaphysical, or moral properties, are in any respect similar to those of a third, are, as to those properties, similar to each other.* Thus, different bodies having the same weight as a third body have the same weight with each other, and equality admits of no degrees, as is evident. But qualities, as colours, heat, cold, &c. may be said to be similar, though differing in degree. Thus water heated to 200 degrees, and water heated to 212 degrees, are both called hot.

702. *But things whose relations are similar to the relations of a third thing, do not therefore bear a similar relation one to the other, but rather relations similar to the relations of each other.* Thus, if *A* and *B* are both fathers, and in that respect resemble *C*, it does not follow that *A* is father to *B*, or *B* father to *A*; for not only the subjects of each relation are different, but the terms also, and consequently it is impossible that the subject of one should be the term of the other. It is in the foundation only of the relation, that the three relations

relations agree, or are similar to each other.

703. Nay, if two objects bear similar relations *to* a third object, as the term of each of them, it cannot follow that either of them should bear a similar to the other, but rather that the relation of one of them to this term, is similar to the relation of the other, *to* this same term ; thus, they agree not only in the foundation, but also in the term.

Thus, if *A* is subject to *B*, and *C* also subject to *B*, it does not follow that either *A* or *C* are subject to each other, as is evident.

704. *Ratios or proportions, said to be similar to each other, are in fact not merely similar, but exactly the same in each case, the one being constantly reducible to the other.* Thus, the ratio of two to four, is exactly the same as that of 6 to 12, or of 2000 to 4000.

705. *Two things are not the same, but somehow distinguishable when what can be affirmed of the one, may be denied of the other.*

706. *A proposition is necessarily true, if a proposition that contradicts it is necessarily false, and VICE VERSA.* Hence, two truths can never contradict each other.

706. Many

706.^b *Many slight probabilities concurring, are equivalent to a strong probability.* Thus, many farthing candles burning together, may give as strong a light as a thicker candle.

707. By *action* I understand, that disposition of a being, by whose immediate intervention, the existence or destruction of another being, or any change in the state of a being, has ensued. To act, therefore, is to intervene in procuring the existence or destruction of, or change in, another being, or in one's own.

708. The substance in which this disposition exists, is called an *agent*.

709. A being, therefore, by whose immediate action another being exists, or is destroyed, or altered, is said to have *produced it*, and is called its *efficient cause*, or simply its *cause*, or the cause of its destruction, or alteration, as the case may be. And even the *end*, *reason*, *occasion*, *condition*, *model*, or *instrument* of the action of an efficient cause, as they contribute, though remotely, to the existence of the effect produced, are frequently called its causes.

710. *Causation*, denotes the relation which has connected a cause with its effect; the foundation

foundation of this relation is the action of the cause. Its subject is the cause itself, and its term, is the effect produced.

711. By *change* I understand a succession of states.

712. *Every being that exists, except one, has had a cause.* This is abundantly proved by Dr. Clarke, Mr. Locke, Dr. Hamilton, and many others, in treating of the existence of God.

713. *Every being is necessarily prior to that being which is its effect.* For, if they be supposed contemporaneous, they must have obtained their existence together, at one and the same instant, and consequently one of them cannot be supposed to have received it from the other. Thus, if the sun be supposed to have been always luminous, the first rays must have been created with it, though in the subsequent instants, light (according to the received opinions,) may have been emitted from it.

714. *But a being considered as a CAUSE, must in that respect be contemporaneous with its effect.*

For, considered as a cause, it bears a relation

tion to its effect, since it cannot be denominated a *cause*, until it has produced its *effect*, which is its term. A relation without a term, cannot exist. A man cannot be called a father until he has had a child.

715. Hence the distinction of priority of nature, and priority of time, is unfounded.

716. Hence also, every cause must be distinguished from its effect, either physically, or modally.

717. *Natural or secondary causes, as they are commonly called, are in fact not the CAUSES but the SIGNS of the various changes which they precede, and which on that account are deemed by many to be effected by them ; whereas, the sole efficient cause of these changes, is the supreme Author of nature himself.*

718. The order in which they follow each other, and the distinct or different appearances they exhibit, in each particular case, and, in different subjects, is constant and uniform in similar circumstances ; and thus bearing every character of a fixed constitution, they are necessarily deemed the results of general laws by which they are regulated.

719. That they are the *signs* of the changes they

they precede, is certain, for, when once their connexion with these changes is known, and a similitude of subject and circumstances is observed, these changes may with certainty be predicted; on this knowledge, all the processes of all arts are founded. But, that they cannot be deemed the causes of any change in the strict sense of that appellation, is equally apparent; for to suppose them *causes*, we must suppose them to possess *power*, or, in other words, that power is one of their properties. Now, that power should be a physical property of any body, is both inconceivable and unnecessary; for all the real properties of bodies, in every other case, and, indeed, essentially, are such as may, by possibility at least, be supposed perceptible by our senses; but power, being an incorporeal or metaphysical property, can in no conceivable case be an object of any of our senses. Hence, neither Sir Isaac Newton, nor the most enlightened of his followers, have considered attraction as an inherent property, nor an efficient cause, but rather as the unknown principle of the tendency of bodies to each other. Now, an inconceivable property should never be ad-

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mitted

mitted without necessity, and here the admission of such a property is totally unnecessary, as the exertion of divine power, regulated by established laws, adapted to every case, is fully sufficient to answer the purposes of general or particular inherent powers.

720. Men also have a dominion over these changes. Of their own volitions, they are the real and efficient causes, but to these volitions a limited power over their own bodies, is generally annexed; by the motion of their own bodies, they can alter the states of other bodies; but the changes arising from the motions thus communicated, and the order according to which they succeed each other, are still conformable to the laws of nature, that relate to these new circumstances; however, as the volitions of men are the original *occasions* of these changes, from whence the succeeding derive, men, or their volitions, are with sufficient propriety considered as their *occasional causes*.

721. *How* any being has its existence, either from any other, or without receiving it from any other, is equally inexplicable, and it must be so; for *how* denotes manner, instrumentality,

lity, or mediation. And to explain these, they must be supposed to have existed; but they have not existed in the case of a being *unoriginated*, nor in creation, which can have no intelligible cause, but the will of the Creator.

722. *Every power is referable to some substance.* Thus, the power of willing exists in the human mind, the power of creating, in the Supreme Being; in short, every power must be the power of somewhat, as every property must be the property of somewhat.

723. *We can never attribute power to any being, but by having observed it, or by analogy, or by its being included in the definition of such being.**

724. *Necessity can in no case be considered as the ground or cause of existence.†* For necessity is a mere abstract term, denoting the impossibility of the non-existence of that, whatever it be, whose existence is asserted. This impossibility has undoubtedly its foundation in the nature of the thing, to which it is ascribed, but this foundation is nothing distinct from

* Hamilton, 39.

† Ibid. 82, 83.

the thing itself, and therefore cannot be the cause of it. Thus we say, *the three angles of every triangle are necessarily equal to two right ones; or it is necessary that the three angles of every right-lined angle, should be equal to two right ones*: we cannot mean, that necessity is the cause of this equality, but simply the mode in which we conceive it to exist.

725. A law, inasmuch as it refers to the will of a lawgiver, may well be denominated a cause; whether physical or moral, as the case may be, but without such reference, it is a mere senseless term.

726. *The adaptation of means to an end can proceed only from an intelligent cause.* For this adaptation presupposes a discernment of the relation, which the means bear to the end. Now the discernment of relations is what constitutes and discriminates an intelligent cause from all other supposed causes. And hence, the more complicated the means, the greater must be the intelligence of the cause.

727. *An effect is not always proportioned to the power of its cause: nor is the power of a cause necessarily proportioned to its effect.* Thus, an artist, who can make the most complicated machine,

machine, may also make the simplest. But this is to be understood of real efficient causes, and not of those improperly so called, as mechanical and instrumental causes; for the effects ascribed to such causes, are certainly *signs* of the power exerted by the real efficient causes.

728. *There cannot be two causes of exactly the same effect.* For, in that case, each would be the total cause of the effect, and not the total; since, besides it, there would be another also; the effect would be entirely produced by one cause, and yet not entirely, since the whole was also produced by another cause, which is evidently contradictory. When a load is drawn by two horses, one part of the weight is drawn by each; it would be absurd to say, that the whole weight was drawn by each, as well as contradictory to common experience.

729. *An affirmative proposition, unless self-evident, requires to be proved;* for, an affirmative proposition asserts the existence of its subject, at some period of time. Now, the existence of any being cannot be supposed, without being proved, unless we already

know that all possible beings exist, which we are certainly far from knowing.

Hence, an hypothesis cannot be deemed true, from the mere circumstance, that its falsehood cannot be shewn.

729^b. Beings should not be multiplied without necessity.

SECTION IV.

OF THE AGREEMENT OF FAITH AND REASON.

730. By *reason*, I here understand, first, intuitive, or demonstrated truths, whether metaphysical, mathematical, or moral.

731. Or, secondly, the intellectual faculty of the human mind.

732. Or, thirdly, the known laws of corporeal nature, and high probabilities.

733. Or, fourthly, expectations founded on the usual train of moral events, or the usual effects of human characters.

734. *Faith* denotes trust, or confidence in, or a persuasion of the veracity, probity, or integrity of any person, and in this sense, we
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are said to *believe in him*; or, secondly, it denotes the credit given to his testimony, in any particular case. This is grounded on the first sense.

735. Faith is either human, or divine, according as it is given to the testimony of men, or to that of the Supreme Being; this last is simply called *faith*.*

736. *Divine testimony* to any truth, is called a *revelation* of that truth.† This testimony is given either *immediately*, by a supernatural communication, or inspiration, of which we know nothing more than that it has existed, as such communication has commonly had no analogy to our usual inlets of information, (though sometimes it has been given by angels, appearing in a human form, and consequently in a manner, similar to that, by which we receive information from each other); or *mediately*, by the positive assertion of persons possessed of supernatural powers, exerted in proof of the credit due to them, and of the truth of the facts or doctrines they announce. Or, lastly, and more re-

* Locke, lib. iv. chap. xvi. sec. 14.

† Ibid. chap. xviii. sec. 2.

motely, by *tradition*, from persons, to whom such proofs have been exhibited.*

737. Thus, Christ received his doctrine by inspiration;† for, he asserted that his doctrine was not his, but rather His that sent him;‡ and the ancient prophets, as Jeremiah, Ezekiel, Hosea, &c. asserted that the *word of God*, that is, a revelation, was made to them; the apostles received their doctrines from Christ, who, by miracles, proved his veracity, and numbers received them from the apostles.

738. Consequently, Christ and the ancient prophets believed the facts or doctrines they announced, to be true, through the conviction that they received them from God, who can neither deceive, nor be deceived; which conviction wrought on their minds, as powerfully as the evidence of a mathematical proposition.

739. But the apostles believed these truths to have been revealed, not through a conviction impressed on their minds, by imme-

* For the sense of this word, as here applied, see Grot. in Matth. chap. xv. sec. 2.

† Fleury, Ecclesiast. Hist. i. 249.

‡ John, vii. 16.

diate

diate inspiration,* but by the intermediation of reason, for they must have argued thus.

740. Doctrines, which God has attested, must be true; but God has attested by miracles, which we ourselves have seen, the truth of the doctrines which Jesus has preached, and which we ourselves have heard him deliver. Therefore, the doctrines preached by Jesus, are true. Their faith, therefore, was founded on reasons perfectly evident and conclusive, resting, first, on the evidence of their senses, and, lastly, on a demonstrative argument, that these doctrines proceeded from God himself.

741. Again, the persons who received these doctrines from the apostles, believed them to have been revealed, that is, miraculously attested by God, because they were announced to have been so, by persons, who could have been impelled by no human motive, whether of ambition or pleasure, to impose upon them; who asserted them in opposition to their

* Not even Peter, when he confessed Jesus to be the Son of God; for, otherwise, it were no merit in him to have done so. See Hammond's note on Matth. xvi. 16, and Wolzogen.

earliest

earliest and most flattering prejudices, deterred by no menaces, dangers, or sufferings; nay, they knew that many of them had suffered death, in consequence of their attestation, that they had seen the author of these doctrines alive, after he had been notoriously put to a public and ignominious death.

742. Consequently they had a moral certainty of the veracity of the apostles, and consequently, of the truth of the doctrines they announced, as originally attested by God himself.

743. Lastly, all succeeding generations believed these doctrines to have been revealed, on the authority, that is, the attestation of the preceding generation; that they received those doctrines, or rather the books that contained them, from the former generation, and so on, in a retrograde order, terminating in that which received them immediately from the evangelists or apostles themselves.

744. The apostles who received these doctrines from Christ himself, were *certain* that they were true in *some* sense, yet they did not understand them in the true sense, until they had received a new illumination at, or after the
the

the day of Pentecost ; thus, before, and even after the resurrection, they expected Christ to establish a temporal kingdom.

745. Hence, it is plain, that the sense of doctrines taught by Christ himself, might be mistaken by those, to whom they were immediately announced, since it was misunderstood by the apostles ; thus, when he informed them and others, that he was the Christ, or Messias, they mistook the meaning of that word, for they imagined the Messias would be a temporal prince.

746. We see also, that the faith of persons to whom revealed doctrines were *mediately* conveyed, was in every progressive step, from the generation that received them from the apostles to that now existing, grounded on reasons evincing their derivation from God himself ; hence, in every case, faith is founded on the evidence of sense, or on moral certainty, that such evidence had been given, and, therefore, can in no case contradict either reasons metaphysically evident, or the evidence of sense ; for, if it could, it would subvert itself, being, as we have seen, grounded on both ; and the reasons for believing the
truths

truths taught by revelation, cannot be stronger than those we have for believing any other evident truth.

747. In examining, therefore, whether any doctrine has been revealed, we are to observe, whether such doctrine be conceived in *intelligible* terms ; and if so, whether it contradicts any intuitive or demonstrable truth, whether metaphysical, mathematical, or moral ; or facts whereof we have a moral certainty ; for, if it does, it cannot be supposed to have been revealed.* And, if found not to contradict any such truth, whether there be a moral certainty of its having been revealed, that is, whether it be certain that the texts said to imply it are genuine, and irrefragable, and undoubtedly contained in the books either of the old or of the new Testament, which all Christians allow to contain revealed truths. And, if so, whether the passages said to contain it, are to be understood in the literal, or in a

* So Moses commanded a prophet tempting the Jews to worship false Gods, not to be believed, but, on the contrary, to be put to death, though what he tells should come to pass. Deuteronomy, chap. xiii. v. 1—5.

figurative

figurative sense; and whether it be morally certain that they are to be taken in that particular sense, or whether they are susceptible of a double sense.

748. If any fact or doctrine, contrary to an evident or demonstrable truth, has the *appearance* of having been revealed, it must, notwithstanding such appearance, be rejected; for, the certainty that we rightly understand texts, presenting a sense incompatible with evident or demonstrated truths, can never be so great as the certainty of those truths, which that sense opposes.

749. Thus, though it is expressly said in the writings of the old Testament, that God made man after his own *image*, that he *repented* having made man, that he remembered, &c. ; and, consequently, that God had a body, which that of a man resembles; that he is subject to human infirmities and passions; yet, as the plain literal sense of these texts, in which this doctrine is apparently revealed, is evidently contradictory to those perfections, which are demonstrably attributed to the Supreme Being, this sense (which anciently imposed

imposed upon many,*) is now rejected by all Christians.

750. Here I cannot omit stating, a celebrated distinction taken between things, said to be *consonant to*, or *according to reason*, and those said to be *contrary to reason*, and those said to be *above reason*.

751. *Reason*, in these cases, is taken in two different senses; for it either denotes the general and well-known maxims of that science, to which the matter alleged is supposed to relate, or, it denotes the actual or possible extent of the faculty of reasoning. Thus, in natural science, a phenomenon is said to be *according to reason*, when it is conformable to physical laws and general experience, such as the laws of gravity, elasticity, chymical affinities, &c. or even to the usual effects of the powers of magnetism, or electricity, which

* The Antropomorphites, see their arguments in Burner's *Archaeologia*, p. 518. So also St. Austin, see Fleury, *Ecclesiast. hist.* vol. v. p. 195; and 2 Jerom. fol. 161, and 163; and Hooker's *Life*, p. 12; and the Abp. of Paris, *Pastoral Letter in Rousseau*, vol. ix. p. 32.

have

have not been, as yet, satisfactorily deduced from general principles. So in metaphysics and morals, those propositions are said to be consonant to reason, whose truth is either evident or deducible from the evident principles of those sciences.

752. Again, those facts or propositions are justly said to be *contrary* to reason, which contradict the laws or maxims of any particular science, such as that a man really dead, should be restored to life *by any human means*; that lead should float on water;* that a man should see by his ears, or hear by his eyes, &c.; that the universe should exist without a cause or result, from the operations of an unintelligent cause; that the distinction between virtue and vice is merely arbitrary, &c.

753. Lastly, those things are said to be merely *above* our reason, which concern facts *undiscoverable* by our natural faculties, or imperfectly intelligible, such as the future resurrection of the dead, the existence of angels. Secondly, facts as yet undiscovered, as the

* Yet gold may, when sufficiently expanded, as gold leaf: lead is as yet, at least incapable of such expansion; its condensed state is here understood.

cause

cause of earthquakes, that of magnetism, electricity, the laws and minute circumstances attending the process of vegetation, or of the nutrition of animals, &c.; though these cannot justly be said to be beyond the reach of our faculties, but rather above or beyond the actual state of our knowledge; otherwise many discoveries in the last century, such as those of Franklin, Black, Priestley, Cavendish, Lavoisier, Montgolfier, &c. might in the preceding century, be said to be above reason, and those of Newton, in the 17th century, &c. But the most important points said to be above our reason, are those of whose truth we cannot doubt, though it seems irreconcilable with other evident truths, or imperfectly intelligible, as unorigination of any being. Of these I shall state a few, and briefly shew that some of them are misunderstood, and others indeed incommensurable with human reason; that is, imperfectly intelligible, but none of them inconsistent or contrary to evident truths: the principle points of this kind are, first, the union of the soul and body. Secondly, the agreement of Divine prescience and human liberty. Thirdly, creation.

creation. Fourthly, eternity. Fifthly, the Divine immensity. Sixthly, the admission of evil. Seventhly, the nature of the percipient principle in brute animals.

754. And first, *as to the union of the soul and body*, the difficulties so clearly and ably stated by Dr. Priestley,* are indeed unanswerable in the commonly-received opinion, that bodies are external substances, distinct from the mind; but are destitute of foundation when bodies are considered as mere sensations; a truth, which our immortal Berkeley has long ago demonstrated.

755. Secondly, the certainty of Divine prescience is easily seen to be consistent with the free agency of the human will, when it is considered, that this freedom requires no more than an uncontrolled choice among motives to action, whose influence, when viewed in different lights, may, in some cases appear equally, and in others unequally advantageous. If the apparent inequality be infinite, there is, I grant, no freedom of choice, but in proportion to the diminution of their different appe-

* Disquisitions on the Nature of Matter, p. 56, &c.

tibility, liberty may exist. It is only, then, where the motives or inducements may be made to appear equal, or approach to an equality, that some uncertainty can prevail; but, in the Divine mind, such uncertainty cannot be found; for, as God's knowledge extends to all possible truths, that of a choice betwixt either of the opposite motives must be known to him, at least as possible, and then that order of things, or series of events, in which a correspondence of one of these motives with volition is foreseen as future, because it will in reality happen, is chosen and decreed.

756. Thirdly, *creation*, being evidently the result of Divine will and power, is perfectly intelligible, when it is considered that this power is infinite. The axiom, that *of nothing, nothing can be made*, relates only to finite, not to infinite power, which requires no subject to work upon, and by which, all things possible may be effected. Of the fact we have a clear notion, and that is all the word denotes; it is only the mode or manner which we cannot comprehend; for this very valid reason, that such mode is merely fictitious, and never existed.

757. Fourthly,

757. Fourthly, *eternity*; the notions commonly entertained of it, undoubtedly involve absurdities. It is held by some, to be a species of duration, implying infinite succession, yet to this succession, an increase is daily made, which is contradictory to the notion of infinity. Besides, what could be the succession when no creatures existed. Others defined it to be a duration that exists altogether, a *punctum stans*, than which notion, as Mr. Locke observes,* nothing can be more inconceivable. For, if this were true, nothing in reality could be said to be past or future, and the creation of Adam and his yet unborn progeny would co-exist, &c. &c.

758. The true notion then of eternity, is that of *existence without a beginning and without an end*. The exclusion of limits in this case, is as intelligible as in any other.

759. Fifthly, *the Divine immensity*: this again includes an evident contradiction; for it is supposed to fill all space, and yet not to be extended. But this is one of the many absurdities swept away along with material substance.

* Book II. chap. 17. sec. 16.

760. Sixthly, *the existence of evil*, which seems contradictory to the notion of the infinite goodness of the Supreme Being. We must however, consider, first, that *natural evils*, such as *pain* and *death*, are the necessary consequences of general laws, whose establishment is equally necessary to the greatest general good of the whole. Secondly, that human life is a state of probation, to which liberty of action is essentially requisite; and, that it is from the abuse of this liberty, that moral evil originates.

761. Seventhly, with respect to *brute animals*, we are by far too ignorant, both of their present and future state, to form any decided opinion concerning them; it is only from analogy that we are inclined to allow them to have any percipient principle; but, is not this analogy far too weak to entitle us to decide? are not their actions, in many cases, merely automatic? if weak analogies be sufficient to induce us to suppose a percipient principle, we must allow it, not only to vermin, but also to microscopic animalculæ, and even to vegetables, which some philosophers have lately endeavoured to establish. As to
their

their future state, if in this life they have any perception of the evils they seem to suffer, we may be assured *a priori*, they will in a future state receive ample retribution for their sufferings in the present.

762. Hence, it must be allowed, first, that many facts or doctrines *contradictory* to the laws of corporeal nature, as far as known to us as miracles, or *unattainable*, as well as inexplicable by any exercise of human reason, as the resurrection of Christ, and the future resurrection of the dead; or *inconceivable*, as the creation of the universe, or of any thing, (No. 685); or even *imperfectly intelligible*, as the unorigination of the Supreme Being; may nevertheless be true, as shewn No. 687.

763. According to Mr. Williams, we can no more *believe* what is above our reason, than we can *see* what is beyond our sight. But the comparison is not apposite; for as what we cannot see, because above sight, may, nevertheless, abstracting from its awkward position, be perfectly visible, to what is *above*, that is, undiscoverable by our reason, may, abstracting from our ignorance, be in itself perfectly intelligible. And as we may believe

in the existence of things, relatively to us invisible, on the testimony of those, to whose eyes they are more advantageously presented, so we may believe what is above our reason, if not in itself repugnant or senseless, on the testimony of a being, whose intelligence infinitely surpasses our own.

764. Bayle,* about the beginning of the last century, denied the distinction betwixt things *above* reason, and *contrary* to reason. Upon this principle, that what is *not conformable to reason*, must be contrary to reason; just as what is not conformable to truth is contrary to truth. By want of conformity with reason, he must mean what is inconsistent with other truths, and if so, he says what is perfectly just; for, what is not consistent with other evident or demonstrated truths, must be not only *above*, but also *contrary* to reason. His comparison is then defective, since reason here signifies truths, as far as truths are known to us. But if by conformity with reason, he means explicable by human reason; and by what is not conformable to reason, he means not *expli-*

* See 3 Bayle, Posthumous Works, p. 833.

cable

cable by reason, his assertion that such doctrine is *contrary to reason* is false; for he himself will allow, that the unorigination of any being is *inexplicable*, though far from being inconsistent with any truth; its *inexplicability* arising from its want of analogy with other truths, and so are many natural phænomena. So also, when he says that many revealed truths are *irreconcilable* with human reason, if he means that they are *adverse* to it, he is mistaken; but if he means that their direct connexion with other truths, cannot be shewn, or, in other words, that they are inexplicable, he says what must be allowed.

CHAPTER IX.

OF FALSE PRINCIPLES.

SECTION I.

UNAUTHORISED SUPPOSITIONS OF PARTICULAR INTERPOSITIONS OF DIVINE PROVIDENCE.

765. It is, I believe, at present, an acknowledged truth; that corporeal nature is governed by general laws; by which I understand the

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regular

regular agency of the Divine Being, modified and diversified in various predetermined circumstances, commonly called the *course of nature*, discovered by experience, and according to which men regulate their most important actions. Yet some think, that this regularity is occasionally interrupted, either for the protection of the virtuous, or the punishment of the vicious, or at least of those they deem such. Thus the earthquake which overturned Lisbon, on the 1st of November 1755, was interpreted by many to have been a punishment of their idolatry on that day; if so, Rome, Paris, Madrid, and Vienna, should also have been destroyed; yet, as Voltaire justly remarks, *Lisbonne est abimée, et l'on danse à Paris.*

766. This supposition, when unwarantably extended, is nothing less than an audacious attempt to scrutinize the impenetrable designs of Divine wisdom, is fraught with the most pernicious consequences, and is condemned by our Lord himself, Luke 13. It tends to subvert the most essential tenet of Christianity, namely, that this life is a state of discipline and probation, and that on this principle,
misfortunes

misfortunes are equally incident to the pious, and impious. Upon the absurd supposition of such providential interference, though contradicted by general experience, it was inferred, that in all contests, God would render the juster party victorious; hence originated the barbarous trials by ordeal, thence called *judicium Dei*, and the equally detestable practice of duelling. Both Mahomet and Cromwell attributed their successes to the particular interference of Providence in their favour, and thence inferred the justice of their respective pretensions. In Spain, both the Bible and the Alcoran were committed to the flames, it being imagined, that whichever of them contained the true doctrine, would remain unhurt; but, to the astonishment of the bigots, both were consumed. Many other instances of this presumptuous credulity, may be seen in Lord Kaimes's Sketches of the History of Man, vol. ii, p. 412, 413.

767. The bigots of the age of Theodosius, persuaded his sons, that the good fortune of his father, was owing to his persecution of Pagans and Heretics. Hence, his son Honorius persecuted both, with the most outrageous violence; yet, in his time, Rome was taken, and

and the empire dismembered and ruined. Libanius the sophist, attributed the family misfortunes of Constantine, and the speedy extinction of his posterity, to his having established the Christian religion. Si c'est pieté et religion, que d'attribuer à la providence, la disposition de tous les événements, c'est presumption de vouloir déterminer, la fin que Dieu se propose en les permettant. Fra. Paolo, Hist. du Con. trente, p. 112.

768. It is plain, an universal denial of such occasional interpositions of Divine Providence, is not here intended; it is evident, that many may be met with in the history of the Old Testament, many in the new, and in the apostolic age, but scarcely any, sufficiently authenticated in later ages.

769. We may also safely affirm, that the succession of events has been settled from the beginning, with infinite wisdom; that all are either caused, or permitted, for purposes, on the whole, most beneficial, and, that wicked men may often be more fortunate, but are always more unhappy than the virtuous, being either tormented by remorse, or haunted by suspicions, of the most afflicting kind. Of this direful situation, history affords many proofs.

SECTION

SECTION II.

THAT CRIMES MAY BE EXCUSED OR EXTENUATED BY
A SUPPOSED IGNORANCE OF THE FIRST PRINCIPLES
OF THE MORAL LAW, OR THE GENERAL PREVA-
LENCE OF FALSE PRINCIPLES, OPPOSITE THERETO
IN ANY AGE OR COUNTRY.

770. Few principles have of late been more strenuously supported, and yet more deserving of general rejection, than that the primary dictates of the moral law, may to any portion of mankind, be utterly unknown, or if known, that practices, plainly inconsistent with them, are in any degree excusable, from their long continuance, and general prevalence in any age or country. By the primary dictates of the moral law, I mean, the six last commandments of the Decalogue, the performance of equitable promises and treaties, the general obligation of not doing to innocent persons, what we could not reasonably wish they should do to us, and a few more. I do not pretend that such abstract principles are innate, but merely, that in every particular circumstance to which they are applicable, a sentiment of approbation or disapprobation, conformable to them, spontaneously,

neously, that is, instinctively, arises in the mind acquainted with that circumstance ; the necessity of food for the prolongation of animal existence, is certainly not known as an innate principle, but hunger, at certain intervals, renders us sufficiently aware of it.

771. The existence of such feelings, or internal instinctive judgment, even in heathen nations is acknowledged not only by Christians,* but by heathens themselves.†

772. That

* Epist. ad Roman. cap. ii. 14, *for when the Gentiles which have not the Law, do by nature, the things contained in the law, they are a law unto themselves*; and v. 15, *who shew the work of the law written on their hearts*, their conscience also bearing witness, and their thoughts, accusing or excusing one another. It is remarkable, that Mr. Locke makes no mention of this text, when treating of moral principles, lib. i. cap. iii.; nor, does he take notice of it in his Comments on the Epistle to the Romans, though in fact, it does not contradict his assertion; for, he only denies, that abstract moral principles are innate. The moral sense he was unacquainted with, as Stewart justly remarks, *Outlines*, p. 24, &c. Le Clerc strongly endeavours to evade the force of this text, interpreting, *written on their hearts*, to mean *discoverable by reason*; see his notes. But what should tempt them to reason at all, if there were no instinct warning them to do so? In reality, reason in simple cases is totally needless, the sentiment precludes it.

† See Cicero de Legibus, lib. i. cap. 11, and the fragment

772. That the sentiments which regulate the intercourse of the sexes, and which, in civilized countries, are commonly deemed natural, (though in some instances, evidently factitious, for they could not originally have taken place) differed in different countries, may be granted, as they seem only the secondary dictates of the natural law, when reason had in some degree been cultivated; but the more outrageous violations of that law, in this respect (as that which is said to take place among the Guebres or ancient Persians), evidently proceeded from superstition; for it is said to have been practised for the purpose of mortification.* And to this principle we may also refer the Babylonian law, commanding indiscriminate prostitution if it ever existed,† which,

ment de Republica, and the numerous quotations of Grotius, in his notes on this text, and on Luke xii. 47; also Home's *Sketches of the History of Man*, vol. ii. p. 342. Dub. edit.

* Picart *Cerem. Relig.* however, I much question its existence, as Herodotus does not mention it, nor does Tavernier.

† The superstitious principle which might have given rise to it, is explained by Goguet, *Origin of Laws*, &c.
Book

which, I think, highly improbable.* Now, superstition, it is well known, is able to control or overrule, the most powerful instincts of the human mind ; and, to this dire enemy of all reason, human sacrifices are also to be attributed ; but, unless enemies were the victims, they could not be offered, without opposing the natural sentiments of humanity, and consequently without remorse, this being the never-failing avenger of the violation of these sentiments, unless opposed by other sentiments equally forcible, as hatred to their enemies, or other reasons equally satisfactory, and such superstition could never allege, resting merely on the vague and groundless imagination, that victims of the worthiest species, and consequently of the human, were most acceptable to the Gods. Therefore,

Book vi. p. 194, Ed. edition. It is related by Herodotus, lib. i. cap. 199, and its credibility supported by l'Archer, in his note p. 522, chiefly on the concurrent testimony of the prophet Baruch. But this book is proved to be Apocryphal by Grotius, in his notes p. 713, and particularly the sixth chapter, in which this custom is thought to be alluded to.

* It is well refuted by Voltaire, *Dict. Philosoph. Babel.*

obedience

obedience to the dictates of an erroneous conscience, is no alleviation of this horrible crime, for, this excuses only, when it is attended with invincible ignorance, which cannot be supposed in this case, as appears by the testimonies already alleged, and those which will presently be seen.*

773. The custom of putting strangers to death, when found in their territories, originated in the well-grounded suspicion of their being spies, and therefore in some measure excusable. As such, strangers not being ignorant of that law, and yet clandestinely transgressing it, evidently deserved some punishment. The Arabs to this day, rob strangers traversing the deserts, without their permission, as they consider these deserts as their property, in which food and water are very scanty, and should not therefore, be taken without their leave.†

774. Other cruel customs, ascribed to some Scythian tribes, as the *Androphagi*, &c. by Herodotus,‡ and other Greek writers, are not

* See Puffendorf, lib. i. cap. iii. sec. 10. No. 6, in note.

† Ibid. lib. iii. cap. iii. sec. 5.

‡ Lib. iv. cap. 103, &c.

to be lightly credited, as the authors of the universal history well remark.* On the contrary, their character is highly extolled by Justin,† and other authors quoted by Bochart in his *Pbaleg*. The saying of the Satirist is well known, *quantum Grecia mendax, audet in historia*; Quintilian Inst. Orat. ii. 4, *Græcis historiis plerumque poeticæ similis est licentia*; and Cicero de Legib. lib. i. cap. i. *apud Herodotum patrem historiæ, et apud Theopompum, sunt innumerabiles fabulæ*.

775. That some African hordes devour their own children, and the still more absurd tale, of mothers alternately feasting on each others children, stand self refuted, since those hordes did not cease to exist.

The Spartan law, for destroying deformed and sickly infants, may well be presumed to have taken place, only with respect to monsters, since Agesilaus, though born lame, and so feeble and delicate in appearance, that his parents had no hopes of being able to rear him, was not only preserved, but lived 84 years.‡

* Vol. ii. p. 273, folio ed. † Lib. ii. cap. i.

‡ Goguet, lib. vi. cap. iii. p. 219.

776. Thefts could not be criminal in Sparta, where they were allowed by a law assented to by the people themselves.

777. The destruction of aged parents, by some American savages, was not the result of want of natural affection, but of absolute necessity, as during the absence of the younger part of their families in providing food, without which all must perish, the aged and infirm could not defend themselves against wild beasts, and therefore demanded a sudden death, as a less cruel termination of their misery. Even among ourselves I have known persons seized with a hydrophobia stifled between two feather beds, to terminate their sufferings.

778. Various other enormities, enumerated by Sextus Empyricus,* evidently without any attention to modifying circumstances, and with the systematic view of rendering all principles, whether of reasoning or morality, problematical, and also by Puffendorf,† are unsupported by any proper testimony, and therefore wholly improbable. That those col-

* Lib. iii. chap. xxiii.

† Lib. ii. chap. iii. sec. 8.

lected by a late eminent writer on the law of nations* from lying or ill-informed modern travellers, were ever habitually and coolly practised by any savage tribes without remorse, is much less credible, than that Europeans, ignorant of their languages and of their motives, should have misrepresented them. Would not a savage, or even a Chinese imperfectly acquainted with the Portuguese language, naturally suppose that burning a Jew or an heretick at an *auto da fe*, was an human sacrifice offered by Christians to their God? The ancient heathen nations were much better acquainted with the Jews who lived among them, and spoke their languages, than any of our travellers, so much relied on, could be with the savage tribes, whom they cursorily visited; and yet they did not understand why the Jews abstained from the flesh of swine. Tacitus, says, *sue abstinent, memoriâ*

* Ward's Enquiry, vol. i. p. 73 & 82. He collected chiefly from Hackluit, who was himself no traveller, but, as Locke says—"Stuffed his accounts with stories taken on trust, and from Tavernier, whose travels are full of mistakes, as Baron, a native of Tonquin, remarks; and from Picart, whose work is filled with trash."

cladis quod ipsos scabies quondam turpaverit, cui id animal obnoxium. And others thought this custom proceeded from their reverence for hogs, *et vetus indulget senibus clementia porcis.* Persius. Many customs prevail in different nations, which, though founded on sufficient reasons, appear absurd to those who are unacquainted with those reasons. Thus by the Egyptian laws daughters were obliged to maintain their indigent parents, but sons were not; * because, as L'Archer well observes, males were often necessarily absent from their families, either on military service, or as judges, or as priests of distant temples; whereas, females had no occupation that necessitated their absence.

779. Neither can any conclusion adverse to the principles here stated, be justly inferred from the cruelty of American savages to their prisoners; for the conduct even of civilized nations, in a state of hostility, is not accurately and immediately pointed out by the moral faculty; and hence even in modern times an eminent jurist has allowed the use

* Herod. Lib. ii. chap. xxxvi.

of poisoned arms,* &c. ; and others, as Vattel, &c. have very properly condemned it. It is to be observed also, that American savages could scarcely avoid putting their prisoners to death, as they had no prisons to detain them ; nor could they sell them as slaves, as European savages did ; nor could they maintain them when they themselves were often distressed for food ; yet they often incorporated them in their own society, when any family consented to such adoption. To inspire terror is the policy of savages, and this object is so fully attained by these cruelties, that wars have of late been very unfrequent among them. The humane usages that at present prevail in civilized nations, are chiefly derived from tacit consent, and the mild influence of Christianity, as Grotius has shewn. That the accounts transmitted to us, from the first visitors of America, of the manners of its savage inhabitants, are, for the most part, gross falsehoods, may well be inferred from their misrepresentations, even of the external form of these savages, of which they could have the

* Wolf, see Vattel, *Droit des gens*, preface, p. 16.

testimony

testimony of their senses. Yet Doctor Robinson informs us,* “ that the same fables that
 “ were current in the ancient continent, have
 “ been revived with respect to the new
 “ world, and America has been peopled with
 “ human beings of monstrous and fantastic
 “ appearance. The inhabitants of certain
 “ provinces have been described to be pigmies,
 “ of three feet high ; those of others to be
 “ giants of an enormous size. Some travel-
 “ lers published accounts of people with only
 “ one eye ; others pretended to have disco-
 “ vered men without heads, whose eyes and
 “ mouths were planted in their breasts. The
 “ variety of nature is indeed so great, that it is
 “ presumptuous to set bounds to her fertility,
 “ and reject indiscriminately every relation
 “ that is not perfectly consonant to our li-
 “ mited observation and experience ; but the
 “ other extreme of yielding an hasty assent on
 “ the slightest evidence to whatever has the
 “ appearance of being strange and marvellous,
 “ is no less unbecoming a philosopher ; as in
 “ every period men are more apt to be be-

* History of America, vol. ii. p. 54. Dub. ed.

“trayed into errors by their weakness in
 “believing too much, than by their arrogance
 “in believing too little. In proportion as
 “science extends, the wonders that amused
 “ages of ignorance disappear; the tales of
 “credulous travellers are forgotten; and the
 “monsters they describe have been searched
 “for in vain.”

Hence it is matter of no small surprise, that
 the sage Locke should credit tales just as
 absurd, and on their authority ascribe moral
 sentiments merely to education and custom.
 It is true, his assertion relates only to the *innateness*
 of moral *principles*; and if principles
 be taken for abstract propositions, his assertion
 is certainly true; for the abstract proposition
 cannot precede the sentiments which give
 birth to it. But these sentiments are felt at the
 very idea of injustice in simple cases. Savage
 tribes were assuredly better known to Aris-
 totle, who lived at a period when the greater
 part of Europe was inhabited by savages,
 than they can possibly be to us; and yet he
 acknowledges, *that by a kind of natural divi-*
nation, as he called it, all mankind distinguish,
generally, what is just from what is unjust, in-
dependently

dependently of all social conventions. By *natural divination* he plainly means the dictates of the moral sense.*

780. Nor does the variation of the dictates of the moral sense in varying circumstances any more oppose the belief of the existence of that sense, than the hitherto unexplained variations of the atmosphere destroy the certainty, that it is governed by fixed laws; or the variations of the laws of motion, or of chymical affinities, in certain cases and occurrences. Thus, though unprovoked and vengeful homicide is justly condemned by all men, yet, if committed in one's own defence, it is with equal justice excused.

781. If, from the absurd opinions of some philosophers on moral subjects (of which many are enumerated by Barbeyrac, in his preface to Puffendorf,) we may infer, that uniform notions of morality have no existence; we may with equal propriety conclude, that neither reason nor truth have any real existence; for these also have been denied by ancient and modern sceptics—men of the

* Rhetoric, lib. i. chap. xiii.

greatest abilities. In fact, most of these ancient opinions were built on mere abstract political reasoning, and not on the supposed absence of moral sentiments.

782. The general conclusion from these considerations is, that compliance with the simple and primary dictates of the moral law, has ever been approved by all tribes and associations of mankind, while in a state of peace, and their violation condemned and attended with remorse, unless overruled by superstition; which originating in the delusive phantoms of imagination, can afford no excuse to its abject and no less criminal votaries.

783. As the enormities of savage tribes have been ascribed to their supposed ignorance of the moral law, so the criminality of many laws, customs, and practices, of civilized nations, has, in a subsequent and more improved period of human reason, met with advocates, who, from party attachment, have endeavoured, if not to justify, at least to palliate and excuse these excesses, by reason of their extensive prevalence in the ages which they disgraced.

784. Thus

784. Thus Chauffepied, in his dictionary, article *Servet*, p. 244, after censuring intolerance in the fullest and most decided manner, and consequently disapproving the execution of Servet, yet adds, *mais qu'on ne fasse pas un crime a Calvin d'avoir été dans les memes préjugés que tout son siecle*, as if received opinions, which in other much less plain cases Calvin utterly disregarded, should, in this case, screen him from blame. How much more just and liberal the sentiments of the late excellent George Lord Lyttelton, who after reciting the detestable custom that prevailed in the twelfth century, of punishing the innocent kindred and dependants of a criminal,* adds—"Nothing can justify this proceeding; for that which is contrary to humanity and natural justice cannot be warranted by any authority of *law* or custom." Doctor Robertson, in his History of Charles the Fifth, expresses himself rather incorrectly† on this

* Life of Henry the Second, vol. i. p. 435 & 573. Dub. ed. See also Home's Sketches, &c., vol. ii. p. 347.

† I have said incorrectly, because I am persuaded that he meant only to excuse the ferocious language and manners

this subject; for he asserts, that—" in passing judgment on the character of men, we ought to try them by the *principles and maxims* of their own age, and not by those of another; for, though virtue and vice are always the same, manners and customs vary continually." The *names* indeed of virtue and vice remain unaltered; but if what is virtuous in one age, may by a change of principles and manners become vicious in another, or *vice versa*, I do not see how the *realities* denoted by those names can be called the same. Dr. Robertson would surely be unwilling to apologize for the conduct of Thomas à Becket in the twelfth century, which yet may be sheltered by this maxim. Accordingly catholic writers have not failed to apply it. The learned Mr. Milner, stating the exemption which the clergy then claimed from the jurisdiction of the state, to have been admitted and sworn to by the sovereigns of most Christian countries, asserts, that the primate would have been inexcusable if he had

ners of Luther; for it is on that occasion he lays down that observation: but, as the words extend further, I think the observation inaccurately expressed. See vol. iii. 8vo. book viii. p. 338. Dub. ed.

not

not defended it in a lawful manner;* and the learned, candid, and impartial writer of the life of Henry the Second, Mr. Berrington, thinks that these maxims, which he allows to be wild, being those of that age, a man of unaffected probity might then maintain them.† And afterwards, after censuring the intemperate conduct of Innocent the Third, he adds, “the maxims of the age how-
 “ever must not be forgotten; they will
 “throw some veil over the failings of Inno-
 “cent; will extenuate the intemperance of his
 “measures, and blunt the edge of censure.”‡
 It is however very evident, and might even then with very little attention be discovered, that the rights, and immunities, and superiority over temporal powers, claimed by the clergy in that age, were pregnant with mischief; and accordingly, both before and after Becket’s time, produced infinite confusion and bloodshed.

785. In the same manner, the right of affording an asylum to the most atrocious

* Milner, letter ii. p. 44. Cork ed. † I Berrington, life of Henry the Second, p. 204. ‡ Vol. ii. p. 309.

criminals,

criminals, claimed by Christian princes for the dwellings of their ambassadors at Rome, was such a gross violation of true religion, and of the tranquillity and good order of society ; of regular jurisdiction ; and of the independence of a sovereign state, as might instantly be perceived, and therefore incapable of extenuation from the habits of the age ; yet Lewis the Fourteenth claimed and enforced this right, even in the seventeenth century ; to say nothing of a still more outrageous and unpardonable exertion and vindication of it in our days.

786. Can any one attempt to palliate the criminality of gladiatorial shews, so long exhibited both in pagan and Christian Rome (proscribed indeed by Honorius, but finally abolished only by the Arian Theodoric,) by reason of their having been practised for upwards of 500 years ? In vain would the rights of an erroneous conscience be alleged in extenuation of such enormities ; for this excuses only when founded in invincible ignorance, as already said, which cannot be alleged in cases so plainly repugnant to reason and humanity.

787. I

787. I omit many other savage practices that obtained in the comparatively dark ages, amply enumerated in the learned and curious treatise of Mr. Ward on the law of nations; which evidently can neither be sanctioned or excused by their universal spread, or the lamentable length of time they have prevailed. One only I cannot omit, as some laws favourable to it still remain in an highly enlightened nation: namely, the practice, or at least the assumed right, of persecution for holding speculative religious opinions, different from, and therefore deemed erroneous, by those in whose hands the sovereignty of the state is lodged. This claim is evidently unjust; for if a *persecutor* thinks himself obliged by the dictates of his conscience to persecute those who avow opinions which to him seem false, and thinks it unlawful to disobey what his conscience thus dictates to him, he should reflect, that the *persecuted* think themselves no less obliged to profess opinions which they judge true and pious—a plea which must be admitted when those opinions are not evidently derogatory of all religion, nor injurious to society; therefore, if the persecutor judges the rights of conscience

science generally obligatory, he must allow, that those of the consciences of the *persecuted* are equally so, and consequently he cannot violate them without falling into a manifest inconsistency and injustice; he must therefore perceive, that the impulse to persecution cannot proceed from an enlightened conscience, and consequently is not obligatory. Now persecution in such cases being essentially unjust, no oaths can bind potentates to exercise it, nor can judges be excused for enforcing the ordinances (for laws they cannot be called) that command it. Vainly would the pretext of ensuring the salvation of souls be alleged; most Christian sects believe that infants dying after baptism are received into eternal bliss; would it therefore be lawful for any one to put them to death, to procure them this inestimable advantage?

SECTION

SECTION III.

THAT A VARIETY OF OPINIONS ON ANY SUBJECT IS A
SUFFICIENT PROOF OF THE UNCERTAINTY OR FALSE-
HOOD OF ALL OF THEM.

788. This principle is frequently urged by persons, who, either through indifference or indolence, and perhaps often on finding the true opinion inimical to their passions, prejudices, or interests, wish to avoid an accurate examination of any of them.

789. They tell us then, that on mathematical subjects no difference of opinion exists, because they alone, say they, are capable of certainty; whence they conclude, that the reason why disputes occur in other sciences is, that such disputes are not capable of receiving a satisfactory decision.

790. Upon consideration, however, it will be found, that the uniform agreement of mathematicians on *pure* mathematical subjects is not caused by the greater certainty to be found in that science, for we are equally cer-
tain

tain of many physical and historical truths as we can be of any proposition in Euclid, but merely from its being a science merely intellectual, founded on the relation of identity of a proposition with some preceding propositions, and these on the same relation with others, until we arrive at the primary definitions and axioms; and from the clear unambiguous signification of the terms it employs, fixed by sensible signs, as figures or diagrams: where these advantages cannot be found, as in some subjects of mixed mathematics, in explaining the grounds of the fluxionary or differential calculus, or the negative sign in algebra, or the logarithms of negative quantities, &c. mathematicians have entertained various opinions.

791. Many of the numerous controversies that still subsist in other sciences, may, with much greater propriety, be ascribed rather to various extrinsic causes, than to any intrinsic impediment to arrive at certainty.

792. Thus, in *politics*, it has long been questioned, and warmly disputed, whether simple monarchy, aristocracy, democracy, or some mixed forms, were most conducive to the

the happiness of a nation; at last it was perceived, that the answer depended on various circumstances, which must, in every instance, modify, limit, and restrain, the application of general principles, and consequently the question (not from the uncertainty of those principles, but from their necessarily diversified application,) was incapable of a general solution; inattention to the modifying circumstances had alone occasioned a difference of opinion. Are we therefore to conclude, that in particular cases, no satisfactory decision can be had? Experience has long since proved the contrary.

793. In *theology*, antecedently to the birth of Christ, various superstitions have indeed prevailed, but as few of them (namely those of the Persians and Egyptians) have been intolerant, it does not appear, that these religionists entered into any controversy with those who held opposite tenets, or submitted their opinions to the test of reason, but rather blindly assumed them from education, and adhered to them merely through veneration for their ancestors, from whom they received

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them.

them.* Yet, though all these opinions were certainly false, it does not follow, that these being set aside, no truth was attainable on this subject; for, many of the most important truths of natural religion, might, with cool and unprejudiced attention, be discovered; but in fact few took the pains, or pursued the right method of arriving at their knowledge.

794. Since the birth of Christ, Jews, Christians, and Mahometans, have maintained very different opinions; but the Mahometans maintained theirs, rather by the sword, than by peaceful argument. The controversy we have with the Jews, might be brought to a speedy decision, could they be induced, as many of their ancestors have been, to pay more attention to the proofs derived from miracles, and to the high degree of moral certainty of the reality of those miracles; but strong and early prejudices, perhaps, also, some interested motives, seem to have hitherto rendered them adverse to all examination and discussion.

795. With respect to the disputes of the

* See No. 387.

various Christian sects with each other, the case is not very different. Some of them originated in that religious insanity, called *fanaticism*, and soon died away. Others of them, owe their continuance, at least, to establishments, and the impolitic interference and support of civil powers. If mere simple Christianity, such as all Christian sects contend for, in their disputes with deists, were alone established, the whole of the gospel morality, and its sanctions, would be preserved; which is all that any government can be interested in, and consequently require.* Such of the present controversies as are capable of a satisfactory decision, would in that case soon cease.

796. In *natural philosophy*, since mere theoretic systems have been abandoned, the want of sufficient data, and of proper instruments, have been the chief obstacles to uncontested conclusions; in proportion as these have been acquired by men of superior talents, as Newton, Boyle, Halley, Hales, Boerhaave, Stahl,

* See Locke's Treatise on the reasonableness of Christianity.

Margraf, Black, Priestley, Cavendish, Bergman, Scheele, Franklin, Lavoisier, Klaproth, Werner, Guyton, Berthollet, Vauquelin, De Luc, Saussure, &c. a perfect uniformity in numberless instances has taken place.

797. Though, of all sciences, metaphysics has been the most contentious, yet there is none which has disclosed more important truths, none whose controversies, when at last brought to a proper issue, have contributed so much to the cultivation of the human understanding, or freed mankind from more absurd or atrocious errors, whose inanity or turpitude it has developed and demonstrated. It has irrefragably evinced the existence, unity, and attributes of the Supreme Being; rendered the immortality of the human soul, at least highly probable; and has annihilated, at least in the minds of the unprejudiced, the fatal doctrine of materialism, that fruitful parent of numberless errors, inconsistencies, and contradictions; and extricating human reason from the mazes and subtleties of scepticism, as well as from the idle dreams and terrors of superstition, has at last established its independence, and the
supremacy

supremacy of its jurisdiction in all cases whatsoever, intelligible by man.

798. To effect these important purposes, the futility of our earliest and most inveterate prejudices must have been made evident. The inaccuracy of judgments deduced from sensible appearances, insufficiently examined, must have been demonstrated; the ambiguity of terms long abusively, or improperly applied, must have been detected, their signification strictly discriminated, ascertained, and inviolably fixed. The difficulty of such a task, where nothing could be rendered apparent to the senses, but mere unembodied intelligibilities alone presented, is sufficiently evident. Yet it has been happily accomplished by the successive efforts of Locke, Berkeley, Merian, and Condillac; insomuch, that few of the idols of the *tribe*, the *den*, of the *market*, or of the *theatre*, as Bacon quaintly calls them,* still remain undemolished.

799. Hence,

* Idols of the *tribe*, are false notions founded in human nature; idols of the *den*, are those peculiar to certain individuals or classes; idols of the *market*, are words in their usual, but false signification; and idols of the *theatre*, are

799. Hence we see, that, from a variety of opinions on any subject, we should not immediately conclude, that none of them is true, or, that truth is unattainable on such subjects; but merely that its discovery demands examination and discussion, or perhaps more numerous *data*, which time and experiments may furnish, though at present unknown.

SECTION IV.

THAT SOVEREIGNS ARE OBLIGED TO MAINTAIN BY FORCE THE RELIGIOUS OPINIONS ESTABLISHED IN THEIR DOMINIONS.

799^b. For, first, speculative opinions should be maintained by arguments and not by force, which can produce no other effect but irritation, or a suspicion that opinions which are so supported, are false; or entire indifference and neglect of examination; and thus, in effect, no conviction of their truth being had, they are the opinions of the nation only in appearance.

false philosophic theories. 1 Shaw's Abr. of Bacon, p. 132, and 2 ditto, 351.

Secondly,

Secondly, this maxim would prevent the introduction of Christianity into any country.

Thirdly, this maxim is equally applicable to false and to true religious opinions ; for no sovereign thinks his opinions false ; and if so applied, truth can never find admission into countries professing the most absurd opinions, whether Pagan or Mahometan ; and in effect conversion cannot be effected in Japan, or Mahometan countries.

CHAPTER X.

OF SOPHISMS.

800. A sophism is an erroneous argument, proceeding either from misapplication, or misconception, or a mistake of the general principles of reasoning.

1. *From Misapplication.*

801. As where an argument is applied against a point, which is not the subject

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of

of the debate ; this logicians call, *ignoratio elenchi*.

802. Thus, the point in dispute between the primitive Christians and the polytheists was, whether there was one God only, or many Gods. Symachus argues, that their ancestors adored a plurality of Gods, and were always victorious ; which was foreign to the subject debated. Besides, the nations they conquered, were also polytheists, and the Greeks in particular worshipped the same Gods.

803. So Paschal, arguing against atheists, insists, that atheism is more dangerous than theism. Whereas, the point in debate is the *truth*, and not the prudence of either system. Some Christian sects use the same argument against each other.

2. *Misconception.*

804. As when an argument is employed, which presupposes the truth of the point in debate to be on one side, without proving it. This sophism, logicians call, *petitio principii*.

805. Thus,

805. Thus, the Jews argue, that Jesus could not be the Messias, because he did not appear as a victorious prince, as the prophecies announced he should, taking for granted, that the prophecies should be understood in the literal sense, which is the point denied by Christians; not only because of the miracles of Christ, which proved him plainly to be the Messias, but because the literal accomplishment of the prophecies, could occasion no change of the depraved moral state of the world, and therefore could not be the true sense of those prophecies.

Thus, when necessarians say, that the mind is always influenced by the preponderant motive, if any motive appeared to be so before, as well as after election, their position would be just. But they infer the preponderance of the motive before election, from its appearance after the election, to have been that with which the will complied. An inference which is a mere *petitio principii*, assuming that for true, which their opponents deny.

806. Nearly allied to this undue assumption of the principle in debate, is that mode
of

of argumentation called a *vitious circle*, in which one point is proved by another, and this other is proved *solely* by the first; so that the proofs are mutual, and under the same point of view.

807. Thus the sceptics argue, that we ought to doubt of every thing, because human reason is fallible, and may deceive us. And since reason may deceive us, we should doubt of the validity of the reasons that induce us to doubt.

808. Thus Aristotle asserted, that the stars seem to twinkle, on account of their immense distance, and asserted, they were immensely distant, because they are seen to twinkle.

809. Thus Descartes formed a vitious circle, when having proved that God exists, because existence is contained in the clear and distinct idea which we have of the Supreme Being, he afterwards derived the certainty we have, that such ideas cannot deceive us, from the incompatibility of such deception with the goodness of the Divine Being.

810. It is also commonly said, that Catholics form a vitious circle, when they prove the authority of their church, by the authority of
the

the Scriptures, and the authority of the Scriptures by that of their church. But, in fact, the authenticity, and consequently the authority of the Scriptures is proved by the testimony of Christians of all sects, that is, of all those who professed Christianity since the apostolic age, unto the present day; and undoubtedly, the Roman and Greek Catholics have their share in this *testimonial* authority, which should be carefully distinguished from *doctrinal* authority. And as the *doctrinal* is not proved by the *testimonial* authority, nor the *testimonial* by the *doctrinal*, there is no circle or reciprocation of proofs. But, if the *doctrinal* authority of the Scriptures were attempted to be proved by the *doctrinal* authority of the church, and the *doctrinal* authority of the church by that of the Scriptures, then there would be a circle.

Ask the astronomer, how he judges motion at any time, to be uniform? he will say, by its passing over equal spaces in equal times, as pointed out by the clock. And, if again you should inquire, how he knew his clock kept equal time? he would answer, by being adjusted to the motions or periodical appearances

ances of the heavenly bodies. But, if he is further pressed for an absolute proof of the equability of their motions, he would confess, that no such proof existed. It may appear preposterous, that the equability of motion in the heavenly bodies should be judged of by clocks, and that these, in their turn, should be adjusted to the motions of the same heavenly bodies. The method is, however, founded in reason. For the uniformity, or deviation from uniformity, of motion in the heavenly bodies, may be ascertained to a certain degree, by a competent number of observations made with clocks; because such observations may be made mutually to correct each other; and thereby, not only to point out the regularity, or otherwise, of the motions in question; but further, may shew them to be more so, than any one of the time-keepers themselves; and, consequently, fit to adjust even these, in their turn. Watson on time, p. 103.

3. *A defective Enumeration, and an erroneous Generalization.*

811. Of all errors, this is perhaps the most common. Thus, if a person is found guilty by a jury, it is inferred by some, that he really was guilty, or by others, that the jury was culpable which found him so; whereas, it sometimes happens, that the culprit is innocent, and yet the jury not culpable, being deceived by false witnesses. The real causes of many important events are frequently unknown, as may be proved in numerous instances; those, therefore, to which alone they are attributed, or deemed to be attributable, are imperfectly enumerated; our decision can reach at most to a probability, and not to a certainty.

812. There are few properties invariably, that is constantly, found in all bodies, namely, gravity, mobility, and the vis inertiae. The supposition, therefore, that the general characters or properties, whether of mankind, or of animals, vegetables, or minerals, or, universally speaking, of any contingent beings, comprehended

prehended under the same general denomination, admit of no exception, is erroneous.

§13. And first, with regard to men, though rationality be their specific character, yet a few are idiots from their nativity. Decrepitude, and the marks of old age, seldom appear before the age of fifty, unless hastened by hardships or intemperance ; yet there is a well-attested account of the general stages of juvenility, maturity of mental powers, grey hairs, and decrepitude, having been attained before the age of eight years. The antediluvians, we are authorized to say, lived many hundred years ; and, even in latter ages, some attained the age of 160 years. How much different individuals vary from each other, both in disposition, mental abilities, and bodily constitution, need not be mentioned ; but, that any of these properties are exclusively confined within certain geographical limits, were a preposterous assertion, though often arrogantly assumed. Unequal degrees of cultivation, and other moral causes, occasion that inequality observable in different nations ; yet, a distinguished critic, about the beginning of the last century, made it a question, whether

whether a German could have wit? There is scarce any general property of animals, whether internal structure, nourishment, mode of production, &c. to which many exceptions are not found, in the vermicular and insect tribes. I need mention only the polypi, and sea anemonies.

So in the mineral class, how many, even of the same species, differ from each other in their external appearance and physical properties, as shape, colour, transparency, hardness, weight, electrical and magnetical properties? Who would have believed, that diamonds were not stones, but a species of coal?

814. As those general conclusions are most frequently erroneous, which exclude all exceptions, others are still more egregiously defective, being deduced not from extensive and general observation, but from a few particular instances, frequently accidental. This erroneous mode of reasoning, logicians call *fallacia accidentis*. Thus, some antimonial remedies, having been in a few cases unskilfully prepared, or injudiciously administered, the parliament of Paris issued a decree,

decree, absolutely forbidding all antimonial remedies in any case, or however prepared. Yet it is now known, that most preparations of that mineral, are of all others the most efficacious and beneficial. So the vices or crimes of a few individuals of some particular nation, sect, or profession, have frequently been imputed to all those of the same nation, sect, or profession. What has been useful or hurtful in some instances, has been judged to be so in all cases, without adverting to peculiar circumstances. This sophism, logicians call, *a dicto secundum quid, ad dictum simpliciter*.

4. *Transition from one Order of things to another.*

815. Thus, when mathematicians argue against indivisible physical points, and insist, that if any such existed, they would be the common measure of all lines; and yet it is demonstrable, that certain lines, as the sides and the diagonal of a square, are incommensurable; they argue from the ideal to the physical order of things, which admit of no strict comparison. So many speculative notions

tions which may be true, when abstractedly considered, are found to be false and ill grounded when attempted to be reduced to practice, of which we have some recent remarkable instances. So princes, judging uniformity of opinions in religious matters possible, and highly desirable, by attempting to enforce it by coercion, have produced infinite evils; forgetting that their power, as well as their duty, extends only to the promotion of the temporal concerns of the society over which they preside, and not to the spiritual, which, residing in and proceeding from the dispositions of the mind, are placed beyond their reach. Accordingly they have hitherto succeeded only in forming hypocrites, infidels, rebels, martyrs, or both.

816. In the same manner, consequences dangerous to society have been deduced from certain religious tenets, which regarded only the world to come; though solemnly denied by those that held these tenets, and contradicted by the experience of ages. Thus the primitive Christians denied salvation to Pagan idolaters,* yet this tenet did not prevent

* Minutius Felix, p. 21. Engl. Edit.

their cordial regard to their idolatrous neighbours, nor weaken their allegiance to their heathen sovereigns; for whose prosperity, on the contrary, they constantly prayed * and often fought.

Thus also several have endeavoured to rank under this species of sophism, the attempt to apply some evident philosophical truths to certain mysterious theological doctrines, as if, though true in philosophy, they could be false when applied to certain mysteries. See Leibn. 77.

5. *Mistakes of the Collective Sense for the Distributive, or the Distributive for the Collective.*

817. The universal term *all*, is applicable either to the parts, of whatever it denotes, *assembled* together, or to each of those parts singly considered; the former is called the *collective*, the latter the *distributive* sense of that term and of other equivalent terms.

Thus when it is said, that *all the members formed a committee*, or that *all the soldiers*

* Tertullian Apolog. p. 194, 197. Eng. Edit.

formed

formed a square, who could think that each member was a committee, or each soldier a square? yet as absurd mistakes have been committed. So when it is said that *the British fleet is invincible when not considerably outnumbered*, it is not meant that *each* ship in the fleet is invincible, but only the whole *collectively*; and on the other hand, it does not follow, that because each ship may be sunk in a naval engagement, that the whole fleet may be sunk or conquered; nor because every fibre composing a cord or cable may easily be broken, that all of them collectively may be easily broken.

So when Dido, in the 4th *Æneid*, tells *Æneas, omnibus umbræ locis adero*, *all* here does not signify in all places collectively, but distributively.

818. Sometimes an universal proposition is true, both in the collective and distributive sense; thus the proposition *all men are mortal* is equally true in both senses; and this always happens when any property of the distributive state receives no alteration in the collective state; thus 1000 men assembled together, cannot perceive a distant object

more distinctly than one man; but it is otherwise where the powers of individuals are increased by their union; thus, 20 men will draw a load which one man cannot move; so, the opinion of three or more skilful and impartial persons, is commonly preferable to that of one only, as in the discussion they enlighten each other; hence consultations of physicians, counsellors of law, &c.

819. In general, the *relative* properties of the parts, taken distributively, should not be attributed to the whole which they compose, nor those of the *whole* to each part; hence the fallacy of the ancient sophism, *three and two are odd and even numbers; now three and two are five, therefore five is a number, both odd and even*; for five is a name that expresses the collective only; so, though the parts that compose the whole are *invisible*, it does not follow that the *whole* is invisible, &c.

820. Some propositions are *metaphysically* universal, denoting some essential property, as that *all circles are round*; these admit of no exception: some are *physically* universal, that is, in the usual course of nature, as that *all*
men

men are rational, or have two hands; these admit of some exceptions; for some are idiots from their nativity, and some are born without hands: some are only *morally* universal, as that *all women are talkative*; these admit of numerous exceptions.

821. Sometimes universal propositions are to be understood with a tacit restriction; thus, when Christ is called the *Saviour of the world*, it is not to be understood, that all mankind will be saved, but only, that all that are saved, are saved only through his merits. So, when it is said, Gen. chap. 1, that God gave Adam for food, *all* herbs bearing seed, it is to be understood only of such as were eatable, which an angel probably taught him to distinguish; so, when it is said, Mark v. 20, *all men did marvel*, the meaning is, all who heard of the miracles of Christ.

6. *False Inferences from Contrary or Contradictory Propositions.*

822. An argument deducing contradictory consequences from contrary causes, or from

contradictory propositions, is fallacious and sophistical.

823. Thus, when it is said, *a white colour is visible, therefore a black colour is invisible*, the consequence is false; for though white and black are contrary to each other, yet they agree in visibility; so, though avarice and prodigality are opposite, yet both are odious; so it does not follow that as virtuous princes are respectable, that vicious princes should not also be respected, &c.

824. So, if we *do not believe* that Nero set fire to Rome, though Tacitus affirms it, surely it does not follow that we *should believe it* if Tacitus *denied it*. Here, and in the subsequent examples, affirmation and denial are contradictory, yet contradictory consequences do not follow from them.

825. So we *do not believe* that Attius Navius the augur cut a flint (or rather a hone) with a razor, though all the Roman historians *affirm it*,* much less should we be tempted to believe it, if all the Roman historians *denied it*.

* See Hook's Roman History, vol. i. book i. chap. vi. sect. 5.

826. So,

826. So, few interpreters, whether Catholic or Protestant, believe the Jewish law to be still obligatory, though Christ expressly affirmed, that he came not to repeal it, but to fulfil it; and that every tittle of it should remain as long as the world lasts;* yet it does not follow that we should affirm it to remain, if Christ had *denied* that it should remain.

827. Again, *Trajan was a good prince, Trajan was not a good prince*, are contradictory propositions; yet to infer from the first, that *only some* of his actions were just; and from the second, that *all* his actions were unjust, were false inferences, though contradictory to each other.

828. I do not mean that two contradictory propositions can be false; for, in reality, that *all* his actions were just, is *false*; witness his persecution of Christians; and that *some* of his actions were unjust is *true*. I only mean, that the inferences are not properly drawn; for instance, the first: the proper inferences should be from the first proposition, that *all* or *most* of his actions were just; and

* Matth. v. 17, 18.

from the second, that *none* of his actions were just; or at least that *most* of them were unjust: these are *contrary* propositions, if we use the words *all*, *none*, and both are false; but if we use the word *most*, they are only sub-contrary, and one is true, and the other false.

829. Thus we see, that a false consequence may be improperly deduced from a true proposition, unless it be syllogistically deduced; for a consequence is not contained in a single proposition, except by conversion, but in two premises either expressed or understood. Thus, if it be said, *the apostle Peter was a saint, therefore he never sinned or erred*, the consequence is false, for he both sinned in denying Christ, and erred after the promise made to him, *that on this rock I will build my church* (if it should be so interpreted,) and after receiving the Holy Ghost, &c. It must here also be remarked, that the epithet *good* is bestowed on persons whose conduct and views are generally good, though liable to some errors, as in the case of David, &c.

830. Note, also, that inferences that express no more than a bare and *precise denial* of

of the contrary of what is affirmed in the proposition from whence they are inferred, are just; because a thing cannot be, and not be, at the same time; thus, when it is said, *it is day, therefore it is not night*, or *sugar is sweet, therefore it is not bitter*.

831. So also an *affirmative* inference is just, if it expresses no more than is implied in the negative proposition from which it is deduced, otherwise it is erroneous.

Thus, if it is said, *Peter is not dead, therefore he is living*; *the sun is not set, therefore it is day*; all these are just inferences.

But if it be said, *Peter is not a prodigal, therefore he is a miser*; or *vinegar is not sweet, therefore it is bitter*; these are false inferences, because they not only express the denial but add to it.

7. *Passing from the Conjoint to the Disjoined Sense, or Reciprocally.*

832. This happens when, from the impossibility of a change taking place at the same instant of time, it is inferred, that it cannot take place at different periods of time; this
the

the schoolmen call *fallacia compositionis*; or when a change that must take place at different periods of time are falsely understood or attributed to the same period of time.

833. Thus, when Zeno inferred, that a body at rest cannot move, this is true, *while* it is at rest, or at the same instant in which it is at rest; but false, if understood of separate instants. In these cases three instants should be distinguished; the first in which the body is at rest; the second in which the cause of change is introduced; and the third in which the change takes place. The cause of change cannot be introduced in the first instant, for the introduction of such a cause, is itself an inceptive change, and this cause must precede the complete change.

834. So when it is said, *that slanderers, &c. cannot enter into the kingdom of heaven*, it is to be understood, while they continue in that guilt, and do not wipe it off by repentance.

835. So, when it is said, that the *predestined cannot be condemned*, the meaning is, that you cannot suppose them both predestined and condemned at the same time; that is, both suppositions cannot stand together,

no

no more than that of rest or motion, but both may stand separately ; for, abstracting from the certainty of their salvation, it is equally certain, that they retain the power of incurring condemnation as long as they live ; thus, though it is certain that the sun rose yesterday, yet it is equally certain that God had the power of preventing it to rise yesterday.

836. The other branch of this sophism is called *fallacia divisionis* : it consists in attributing to all the parts taken collectively, that which is truly attributed only to all the parts taken *distributively*; thus, though each man in London may die this week, yet it would be absurd to suppose, that all the men in London should die this week ; for though it be physically possible, yet it is morally impossible. So, though it is physically possible that each copyist of the holy Scriptures should err or mistake some material passage, yet it is morally impossible that all the copyists should so err or mistake, as there are many thousands of them.

837. Or in denying *that* to a *collection* of all the parts, which yet may well be denied of

of all the parts taken *distributively*, or even of smaller collections ; thus, because one glass of wine, or even ten glasses of wine, may not make a man drunk, it would be absurd to suppose that 100 would not.

838. Or, affirming *that* of an *indeterminate* part, which is truly affirmed of any *determinate part* ; thus, though we may allow that a man is not necessitated to stand in any *determinate place*, yet we must deny that he can stand in no *indeterminate* place.

839. Or, attributing to both parts of a compound, that which is truly attributable only to one part of the compound ; as in the following sophism : *man thinks* : now man is a compound of soul and body, therefore, both soul and body think ; besides, it errs against the second syllogistic rule, for *soul and body*, as forming a *compound*, is the attribute of the second proposition ; whereas, in the conclusion, they are taken distributively, and consequently not in the same sense.

8. *Mistakes in the Assignment of Causes.*

840. These mistakes are called *a non causa pro causa*, and *post hoc ergo propter hoc*.

Sometimes

Sometimes these mistakes are merely unsatisfactory, the error consisting not in the assignment of a *false* cause, but of one *too general* to convey any instruction, and thus deceiving the inquirer. For instance, assigning the *will or permission of God*, as the cause of any event; this every one already knows; but as God always acts by the intermediation of secondary causes, it is the immediate, and not the remote cause that is sought, as this alone conveys any new knowledge; this mistake is generally made by ignorant, or obtruded by artful people, to evade the discovery of the true cause.

841. But the most usual mistake in philosophic discussions, consists in attributing indiscriminately to preceding circumstances the efficacy of real causes; whereas, they are often in truth only *signs* of the action of some really efficient causes; or in mistaking final causes for efficient causes.

842. To explain this matter clearly, it is necessary to state the precise notion of a *cause*: whatever contributes to the existence of a thing (or, more rigorously speaking, to the existence or destruction of any thing) is called the

the cause of its existence or destruction. And as many things tend in different ways to produce the effect, causes are variously distinguished from each other; only six of these distinctions need here be mentioned, namely the *efficient*, the *occasional*, the *conditional*, the *final*, the *physical*, and the *moral*.

843. An *efficient* cause is that whose action is alone sufficient to produce the effect; this sufficiency is made known to us, either by the definition of the being that possesses it, or by consciousness; it is called *power*.

844. Hence there are but two efficient causes naturally known to us, namely, *God*, in whose definition omnipotence is included, and the *human soul*, of whose power to produce its own volitions we are conscious. All other *physical* or corporeal causes, as they are called, are nothing else but applications of the Divine will to the production of an effect on certain occurrences, constantly, universally, and uniformly, in the same circumstances: these applications, when traced in different subjects, each to one general connecting principle, are called the *laws of nature*; and the bodies through whose intervention, in conformity

formity to these laws, the effect is produced, are called *occasional* or *secondary causes*, and the conditions on whose presence or absence the production of the effect depends, are called *conditional causes*, or necessary conditions; *conditio sine qua non*.

845. *Occasional* causes, though in reality, inactive, yet being the only that are perceptible, either by the senses or the imagination, are simply called *causes*, by most philosophers, and so I shall continue to call them, in conformity to the received language, but still retaining the true meaning, as we do in speaking of the rising, setting, and motion of the sun.

846. As every newly-existing object is preceded by objects or circumstances which we deem its causes, most modern philosophers define *causes* (meaning efficient causes) to be nothing more than such previous circumstances as constantly and invariably are followed by an effect;* yet many circumstances constantly, uniformly, and universally precede effects, of which they cannot be deemed the causes. Thus, night precedes day, smoke

* Priestley, *Philos. Necessity*, p. 11, 18.

precedes

precedes the combustion of vegetables, effervescence precedes the solution of limestones; for the carbonic acid must be expelled before other stronger acids can unite to them; effervescence is not the cause, but the condition on which the solution depends, and a *sign* thereof. Surely *privations* cannot be the efficient causes of any thing, yet the privation of food or of air will occasion the death of animals; the privation of *light* will be followed by the blanchiffment of sundry plants, &c.; they are only the conditions on which other appearances depend, or on which other causes act. All the powers of inanimate nature may, in their last result, be resolved into attraction, repulsion, and impulse, variously modified; all act at given distances; thus light is reflected at a certain minute distance from the reflecting body; large masses of matter, such as the planets, act at the greatest distances; magnetic and electrified bodies at very perceptible distances; and chymical affinities at the least.

847. But though the mere priority of an object, and the subsequent existence of an effect, even when constant and uniform, be not sufficient

sufficient to induce us to deem that object the cause of that effect, and that; therefore, *post hoc ergo propter hoc*, is a sophism; or false reasoning; yet, it is also certain, that where, in the greater number of cases, this succession has not been observed to take place, there is not a shadow of reason to suppose any preceding object to be either a cause, or a sign, of any future event. Hence the absurdity of supposing comets or eclipses to be either causes or signs of subsequent disasters. The celebrated Bayle, in his *Pensées sur les Comètes*, has enumerated the misfortunes that have happened the years in which comets have been seen, and compared them with the events of many subsequent years, to destroy this illusion at the time in which it universally reigned; but, as it has long since vanished, it is unnecessary to dwell upon it. It originated, not in rational observation, but in that fear which all grand and new appearances naturally inspire into beings so weak and impotent as man. Even inferior animals are not strangers to it.

848. Another branch of this sophism con-

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sists

sists in assigning as causes, some phrases or words, void of any intelligible meaning. Thus, atheists ascribed the admirable structure of the planetary system, and of animals and vegetables, to *blind chance*; the peripatetics asserted, the *horror of a vacuum* caused the ascent of water in pumps, and many other particular occult causes.

Necessarians also constantly mistake final and conditional causes for efficient causes, and *moral* causes for physical. Final causes, are the particular ends which the will pursues; the conditional, are the reasons on the view of which the mind acts, that is, forms its volitions, but which have no more a physical activity, than the view of a rough and smooth road, in determining which to follow.

CHAPTER

CHAPTER XI.

OF TECHNICAL MODES OF REASONING.

849. These are fyllogisms, enthymems, epicheremas, forites, dilemma, and induction. But, the principal of these is the fyllogism.

SECTION I.

OF SYLLOGISMS.

850. A fyllogism is an argument, consisting of three propositions, the last of which is deduced from the two former, and if it be regular, is in fact contained in them. This is the great advantage of the fyllogistic mode of reasoning. For, by it, the framer himself discerns the conclusion, and the opponent, if he grants or denies the two first propositions, must grant or deny the conclusion, or shew that the fyllogism is not in form, that is,

H h 2 irregularly

irregularly constructed. The whole force of an argument is stated with precision, and the attention is not dissipated by prolix, involved, and vague declamation. Hence, our ablest reasoners have always sought to present the final result of a long chain of reasoning in the syllogistic form.

851. Syllogisms are of three sorts, simple, complex, and composite; the following rules, which I abridge as much as possible, are applicable to all of them; but, before I state them, it will be proper to remind the reader of some observations already made in the first part of this work.

Preliminary Observations.

852. First, an *affirmative* proposition is that of whose subject something is affirmed, and a *negative* proposition is that of whose subject something is denied.

853. Secondly, a *singular* proposition is, in syllogistic reasoning, considered as an universal one, because the subject is taken in its whole extent.

854. Thirdly, an *indefinite* proposition, is that in which the extent of the subject is not defined

defined by the signs of universality or particularity, but by the nature of the connexion betwixt the subject and the predicate, see N° 109. It is to be taken as universal, when the connexion is essential, and the word *all*, *every*, or *none*, may be added to the subject; it is taken *particularly*, when the connexion is contingent or denied, the words *some*, or *few*, or *many*, or *most*, or *several*.

855. Fourthly, the *predicate of an affirmative* proposition, is always taken *particularly*, even though the proposition itself should be universal. N° 103.

But the predicate of a *negative* proposition is always to be taken *universally*.

Note also, that an *affirmative syllogism*, is that, whose conclusion is affirmative; and a *negative syllogism* concludes negatively.

This being premised, we may lay down the following principles.

1. Principle.

856. In *affirmative syllogisms*, the applicability of two expressions* to a third expression,

* I have substituted *expressions* for what others called notions or ideas, and *applicability* for what others call agreement or coincidence.

called the middle term, either universally or particularly, is affirmed in the two first propositions; namely, the applicability of one of the expressions to the middle term, in one of the two first propositions, and of the other expression to the middle term, in the other proposition; and thence the applicability of the two expressions to each other, either universally or particularly, as the case may be, is inferred in the third proposition. According to the axiom *que sunt eadem unitertio sunt eadem inter se*.

2. Principle.

857. If the *syllogism be negative*, then the applicability of one of the expressions to the middle term, either universally or particularly, is affirmed in one of the premises, and the applicability of the other expression to the middle term, either universally or particularly, is denied in the other proposition. And hence the applicability of the two expressions to each other, whether universally or particularly, as the case may be, is denied in the third proposition; that is, the conclusion, according to the maxim, *duo non conveniunt inter*

*inter se nec sunt quid idem, cum uni aliquid
convenit, quod repugnat alteri.*

3. Principle.

858. Hence it is plain, that the middle term should be found in both the premises, but never in the conclusion, where it would be superfluous, and by this mark we may always distinguish it. Yet, it may be introduced incidentally and obliquely, as in No. 882, post.

4. Principle.

859. Secondly, that it should have the same sense or signification in each of the premises; for, if it had one meaning in one of the premises, and another meaning in the other, then the *agreement* of the two expressions compared with it could not be inferred, as one of them might agree with one of its meanings only, not with the other meaning, with which the other expression might agree, and thus in fact there would be two middle terms instead of one.

H h 4

5. Principle.

5. *Principle.*

860. Thirdly, that it should be taken universally, in at least one of the premises; for, if it were taken particularly in both, it might agree with one of the expressions, with respect to some particulars, and agree with the other in other particulars, and thus there would in fact be two middle terms, as in the former case.

861. But, it must be remembered, that this danger does not occur, when a *singular* proposition is employed, this being considered as universal.

862. Nor even when *definite* propositions are employed, because the identity of the particulars referred to, is determined, and not merely vague and undetermined.

6. *Principle.*

863. That neither of the two expressions, whose applicability to each other is inferred or denied in the conclusion, can be taken more extensively, nor differently in the conclusion than they were in the premises; so,
that

that if either of them was taken particularly in either of the premises, the concluding proposition must also be particular.

7. *Principle.*

864. That from two negative propositions nothing can be inferred ; for, from this, that one of the expressions is inapplicable to the middle term, and the other also, it cannot follow that they are applicable to each other.

8. *Principle.*

865. From two affirmative premises, a negative conclusion cannot be drawn ; for, if one of the expressions is applicable to the middle term, in one of the premises, and the other in the other, they cannot be inapplicable to each other in the conclusion.

866. Every syllogism should be constituted agreeably to these principles ; and the premises and conclusion should be formed according to one or other of the following rules.

RULES.

RULES.

PREMISES.	The conclusion may be,
1.	
867. From two general affirmative propositions,	A general affirmative.
2.	
868. Two general affirmatives,	A particular affirmative.
3.	
869. One general affirmative, and one particular,	A particular affirmative.
4.	
870. One general affirmative, and one general negative,	A general negative.
5.	
871. One general affirmative, and one general negative,	A particular negative.
6.	
872. One general affirmative and one particular negative,	A particular negative.
7.	
873. One general negative, and one particular affirmative,	A particular negative.

Examples

Examples of these Rules.

Of the 1st.

874. All animals are mortal, all men are animals, therefore all men are mortal.

Of the 2d.

875. All sciences are useful, all sciences are difficult, therefore some difficult things are useful.

Of the 3d.

876. All traitors deserve punishment, some Christians are traitors, therefore some Christians deserve punishment.

Of the 4th.

877. Nothing shameful should be practised, all fraud is shameful, therefore no fraud should be practised.

Of the 5th.

878. All attempts to make mankind happy, are praise-worthy, no such attempts have hitherto

hitherto been successful, therefore some praiseworthy attempts have not been successful.

Of the 6th.

879. All amusements afford pleasure, but some amusements are not proper, therefore some pleasures are not proper.*

Of the 7th.

880. No liar is worthy of credit, some Jews are worthy of credit, therefore some Jews are not liars.

Examples of singular Syllogisms.

Of the 1st Rule.

881. *The only son of Philip king of Macedon, (or whoever was the only son of Philip), conquered the Persian empire; Alexander was the only son of Philip, therefore Alexander conquered the Persian empire.*

Of the 2d.

882. *Luxury introduced effeminacy, effeminacy occasioned the ruin of the Persian empire, there-*

* As gladiatorial shews, bull baiting, &c.

fore

fore luxury introduced that which occasioned the ruin of the Persian empire.

Here *luxury and effeminacy* are considered as single objects, therefore the propositions are singular.

Of the 3d.

883. *Anacharsis was a Scythian, Anacharsis was a philosopher, therefore some philosopher was a Scythian; or therefore some Scythian was a philosopher.*

Of the 4th.

884. *The practice of the doctrine of Christ leads to final happiness, the practice of the Epicurean doctrine does not lead to final happiness, therefore the practice of the Epicurean doctrine differs essentially from that of the Christian doctrine.*

Practice is considered as a single object.

Examples of definite Syllogisms.

Of the 1st Rule.

885. *Civil dissensions caused the ruin of the Grecian states; trifling interests produced THOSE dissensions,*

diffensions, therefore trifling interests caused the ruin of the Grecian states.

This fyllogism appears to me just, though two causes are assigned of the ruin of the Grecian states, the one immediate, and the other distant and ultimate, as they are both connected with each other, and *qui est causa causæ est causa causati.*

886. The first proposition, though indefinite, is equivalent to a particular proposition, namely, to *some* civil diffensions; not all those that happened in a course of ages, but *those* that existed during the reign of Philip of Macedon; the second proposition is also in appearance particular, for it was the trifling interests that then existed, and not those that had long before existed, that produced these diffensions. The term *these*, renders the proposition definite; and the fyllogism developed runs thus: Some civil diffensions caused the ruin of the Grecian states; some trifling interests produced these diffensions, therefore *these* trifling interests were the cause (or the ultimate cause) of the ruin of the Grecian states.

SECTION

SECTION II.

OF VICIOUS OR IRREGULAR SYLLOGISMS.

887. A vicious or irregular syllogism, is that in which any of the principles or rules of syllogistic reasoning is transgressed. Commonly, it is some or other of the principles that are violated, though any rational person may commonly discern their fallacy, yet that is not sufficient when we argue with an obstinate opponent; the principle or rule transgressed, must be pointed out. Hence, I here give some examples.

Example 1st.

888. *All Englishmen are lovers of liberty, no Dutchman is an Englishman, therefore no Dutchman is a lover of liberty.* Here the 6th principle is violated; *lovers of liberty* being the predicate of an affirmative proposition, is taken particularly in the first premise; yet it is taken universally in the conclusion, being the predicate of a negative proposition.

Example

Example 2d.

889. An apparent exception to the 6th principle. *Commoners alone are eligible into the lower house of parliament ; no peer is a commoner, therefore no peer is eligible into the lower house of parliament.* This syllogism is regular. Here *eligible*, &c. is apparently taken particularly in the first premiss, being the predicate of an affirmative proposition. But, it being an *exclusive* proposition, it includes a negative, being equivalent to *commoners are eligible*, and *none but commoners are eligible*, &c. therefore it is taken generally in the first premiss, being the predicate of a negative proposition, as it is in the conclusion.

Example 3d.

890. *Some commoners are merchants, no peer is a commoner, therefore no peer is a merchant.* Here the violation of the 6th principle is evident, merchant being expressly particular in the first premiss, and general in the conclusion.

Example

Example 4th.

891. *Every metal is a mineral, every stone is a mineral, therefore every stone is a metal.* Here the 5th principle is violated; *mineral*, which is the middle term, not being taken generally in either of the premises, it being the predicate of an affirmative proposition, (and consequently to be taken particularly) in each of them.

Example 5th.

892. *All animals were in Noah's ark; Bucephalus was an animal, therefore Bucephalus was in Noah's ark.* Here the 4th principle is transgressed; for *animals*, the middle term, means evidently the animals existing at the period of the flood, in the first proposition, and in the 2d, it denotes an animal, existing many ages after the flood; to say nothing of the falsehood of the first proposition, for only pairs of each species were in the ark; but here the form only is in question.

Example 6th.

893. *He who does not study will not become learned; Titius does not study, therefore Titius will not become learned.* This syllogism is perfectly regular, though apparently contrary to the 7th principle; for, the first proposition is equivalent to an exclusive proposition, as *students alone will become learned*; that is, students, and none but students, will become learned; but *Titius is not a student*, therefore Titius will not become learned.

SECTION III.

GENERAL CONSEQUENCES RESULTING FROM THE
SYLLOGISTIC FORM.*1st.*

894. That the syllogism being in form, that is duly constructed, if the premises be *true*, the consequence must also be *true*, for it is contained implicitly in the premises; or, in other words, a *false* conclusion cannot be drawn from *true* premises.

2d.

2d.

895. If both or any of the premises be *false*, a true conclusion cannot be drawn from them, for a true conclusion cannot be contained in such premises; truth and falsehood being incompatible with each other.

3d.

896. If both the premises be possible, necessary, certain, or probable, the conclusion also must be possible, necessary, probable, or certain; but if one of them be barely possible or probable, the conclusion will be barely possible or probable, and *a fortiori* it must be so, if both the premises be barely possible or probable; for the connexion with the middle term is barely possible or probable, as the case may be.

Example.

897. If the barometer falls we shall have rain; but the barometer has fallen, therefore we shall have rain.

Here the 2d proposition is certain, but the first is only probable, therefore the conclusion is only probable.

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898. If

898. If both the premises be barely probable, the conclusion will be only the probability of a probability.

Example.

899. I have been told the barometer has fallen, (that it has fallen as I am told;) but if the barometer has fallen, we shall have rain, therefore we shall have rain.

Here the probability of rain is compounded of the probability of the barometer's having fallen, and of the probability that this fall will be followed by rain.

4th.

900. Conversely if the *consequence* be duly extracted from the premises, these must possess the same qualities as the consequence, as to *truth* or *falsehood*, *possibility*, *certainty*, or *probability*.

SECTION IV.

OF COMPLEX SYLLOGISMS.

901. A complex syllogism is that in which the applicability of two expressions to each other, is inferred from the applicability of one of them to the middle term, and the connexion of the other with the middle term. Or, secondly, by shewing the applicability of one of them to the middle term, and that the other is comprised within the general signification of the middle term.

Hence we have two cases, of each of which I shall give examples. Yet, in reality, this complexity is only in the mode of expressing the propositions, for in the mind, all these syllogisms are simple, as I shall shew in each case. Therefore, if any intricacy occurs, they should be simplified. They are by far the most usual, and therefore deserve the greater attention.

1st Example of the first Case.

902. The evils arising from war are numerous, yet wars are often just; therefore, the

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evils

evils arising from some just actions are often numerous.

This is simplified thus, *war is the source of numerous evils, yet some wars are just, therefore some just actions are the causes of numerous evils.*

Example 2d.

903. The strongest motives to a virtuous conduct are to be found in the new Testament. A virtuous conduct would constitute the happiness of society ; therefore, the strongest motives to what would constitute the happiness of society, are found in the new Testament.

This is simplified thus, *a virtuous conduct is most strongly promoted, by motives to be found in the new Testament ; a virtuous conduct would constitute the happiness of society, therefore, what would constitute the happiness of society, is most strongly promoted by motives to be found in the new Testament.*

Example 3d.

904. Christianity forbids servants to obey such commands of their masters, as are contrary

trary to the Divine law. Certain commands of masters, are contrary to the Divine law; therefore, Christianity forbids servants to execute certain commands of their masters.

The first proposition is exceptive, and the syllogism is simplified thus: *Christianity allows servants to execute all the commands of their masters, EXCEPT such as are contrary to the Divine law; certain commands of masters fall within the exception, therefore, Christianity does not allow servants to execute certain commands of their masters.*

Here the exception *commands contrary to the Divine law*, are the middle term. The conclusion is negative, though the premises are apparently affirmative, but the first proposition being exceptive, includes a negative; for, being developed, it runs thus: Christianity allows servants to execute the commands of their masters, but *does not* allow them to execute such commands as are contrary to the Divine law.

1st Example of the Second Case.

905. To protect their subjects is the duty of kings; George the 3d is a king, therefore

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to

to protect his subjects is the duty of George the 3d.

It is simplified thus: *kings are obliged to protect their subjects. George the 3d is a king, (that denomination is suited to him,) therefore he is obliged to protect his subjects.*

Example 2d.

906. The punishment of crimes, is necessary for the welfare of society. Murder is a crime, therefore the punishment of murder is necessary for the welfare of society.

It is simplified thus: *crimes are necessarily to be punished for the good of society, murder is a crime, therefore, &c.*

Example 3d.

907. The Divine law requires legal obedience to kings. George the 3d is a king, therefore the Divine law requires legal obedience to George the 3d.

It is simplified thus: *kings are entitled to respect by the Divine law, George the 3d is a king, therefore, &c.*

Examples

Examples of some Irregular Syllogisms.

1st.

908. We ought to believe the scriptures; tradition is not the scripture, therefore we ought not to believe traditions.

Simplified thus, *the scripture is entitled to our belief; tradition is not the scripture, therefore tradition is not entitled to our belief.* *Entitled to our belief*, is the predicate of the first proposition, and is taken particularly; but in the conclusion, it is taken generally, being the predicate of a negative proposition.

2d.

909. He that says the French government is a government, says what is true; but he that says the French government is a *good* government, says that it is a government; therefore, he that says the French government is a good government, says what is true.

Here, *he that says*, is the subject of the first proposition. *The French government is a government,*

vernment, is the middle term; and *says what is true*, is the predicate. In the second proposition the subject is, *he that says the French government is a good government*; and, *says* (or is saying) is the predicate, and *it is a government*, is the middle term. Here, then, there are five terms, viz. two subjects, two predicates, and a middle term. The second subject and the first predicate only, are found in the conclusion. And the middle term is taken twice particularly; so that it trespasses on every principle.

3d.

910. A Mahometan is not what a Christian is. Now a Christian is a man, therefore a Mahometan is not a man.

Here a *Mahometan* is the subject of the syllogism, *what* (that is *that being which*) is the predicate, and *a Christian is*, the middle term, connected with the predicate by the relative *which*, indicating the relation of *apposition*. In the second proposition, the middle term is the subject, and *a man* the predicate, but it is here taken particularly, being taken according to its comprehension, but not according

according to its whole extension. And in the conclusion it is taken generally, being the predicate of a negative proposition, in contradiction to the second rule. There are also two predicates; that of the first proposition is omitted in the conclusion. It appears to me also, that the first predicate is ambiguous; for, *is not what a Christian is*, may be understood *that particular being which a Christian is*, or *any thing which a Christian is*. Taken in the first sense, it would be particular notwithstanding the negative, but taken in the second sense it would be general, and I believe that, strictly speaking, it should so be taken. In a word, the predicate is taken particularly in the second proposition, and generally in the conclusion, the conclusion being negative.

4th.

911. To kill a man is a sin. A murderer is a man, therefore to kill a murderer is a sin.

In the first proposition *to kill* is the subject, *a man* is the middle term, and *a sin* is the predicate. The middle term is connected with the subject by the *relation of termination*.

In

In the second proposition, a *murderer* is the subject, and a *man* the predicate, but the subject in its very denomination involves a *criminality deserving death*, and in this sense only the predicate is applicable to it. The second proposition, thus developed, runs thus: *A man guilty of murder is a man.* Now a *man* in the first proposition denotes an *innocent man*, for every man must be supposed innocent until his guilt is proved; but in the second proposition, man is expressly declared to mean a *guilty man*, therefore, the middle term is taken in two different senses contrary to the first rule, and consequently the syllogism is vitious.

According to Dr. Watts, from whom this syllogism is taken, p. 289, the word *kill*, in the first proposition, signifies to kill *unjustly or illegally*, but in the conclusion it is taken *generally*, and therefore not good.

The word *to kill* in the Divine command, denotes in the Hebrew language, killing unjustly, and consequently slaying an *innocent man*, as Grotius informs us. Man is the middle term, it denotes therefore an innocent man in the first proposition; but in the
second

second proposition it denotes a man generally, abstracting from his guilt or innocence, therefore it is not taken in the same sense in both, and thus violates the 4th principle.

SECTION V.

OF THE MODE OF ARGUMENTATION CALLED *reductio*
AD ABSURDUM OR AD IMPOSSIBILE.

912. The ancients had many intricate rules for converting syllogisms couched in one form, into another more intelligible, which, in the present treatise, are all useless except one, which was called *reductio ad absurdum vel ad impossibile*. This they applied when no other mode of reduction could be applied. As this mode of demonstration is frequently used by Euclid and other mathematicians, I shall here explain its artifice. If the premises were admitted, but, on account of their obscurity or intricacy, were difficultly combined, (as sometimes happens in geometry,) and consequently the evidence of the conclusion not clearly discerned, they then reasoned thus: If the
conclusion

conclusion be false, then a proposition contradictory to it must be true, and if it be true, then one of the admitted premises must be false.

Example.

All fraud is prohibited; some sorts of traffic are not prohibited, therefore some sorts of traffic are not fraudulent.

Now if this conclusion be denied, after allowing the premises to be true; then a proposition that contradicts this conclusion, viz. *all sorts of traffic are prohibited*, must be true, and yet it is both absurd and contradictory to one of the above admitted premises, which I shew thus.

All fraud is prohibited; all sorts of traffic are fraudulent, therefore all sorts of traffic are prohibited. Now this conclusion is fairly extracted from the premises, and yet it is clearly contradictory to the second proposition of the first syllogism.

913. It is true that the second proposition of this syllogism was not admitted, but since the conclusion was admitted, any of the premises, from which it is strictly deducible, must
also

also be admitted. For, since the conclusion is contained in the premises, if the conclusion be true and regularly drawn, the premises must also be true.

914. To this it may be objected, that mathematicians frequently draw true consequences from false, and even impossible suppositions; but it must be considered, that these suppositions being admitted, involve ratios or relations, which truly and necessarily arise from those suppositions; thus if a man existed with four heads, it would necessarily follow, that he had eight eyes and eight ears. And that the number of his eyes and ears was equal, &c. but then this consequence springs from this supposition, as *admitted to be true*, and not from any connexion with it as far as it is false.

915. The ancient mode of scrutinizing syllogisms, is applicable only to simple syllogisms, and not to the complex. The modern has the advantage in this respect, but it is not accurate.

SECTION VI.

OF THE SCRUTINY OF SYLLOGISMS.

916. The surest method therefore of examining the truth or falsehood of every syllogism, is to simplify it by lopping off all superfluous parts, and to compare its essential terms with the general rules that relate to them; as shewn both with respect to the fallacies of simple and complex syllogisms. In making this analysis, it will be proper to place the most general proposition first.

Secondly, it will likewise be frequently advantageous to convert abstract words into those concretes of which they are the abridgement.

SECTION VII.

OF COMPOUND SYLLOGISMS.

917. A *compound* syllogism is that, whose constituent terms, or propositions, are variously intermixed

intermixed and connected by conjunctive particles. Of these the most worthy of notice, are the *copulative*, the *disjunctive*, and the *conditional*.

Of Copulative Syllogisms.

918. Copulative syllogisms are those which affirm or deny the connexion of two subjects or two predicates in one proposition, by means of a copulative conjunction, and reverse or omit that connexion in the second proposition.

Affirmative.

919. In these the connexion is affirmed in the first proposition, but one branch only of the connexion is affirmed or denied, or one affirmed and the other denied in the second.

Example 1st.

920. Meekness and humility always accompany each other; Moses was meek, therefore he was humble.

Example 2d.

921. Honesty and prodigality never accom-

K k

pany

pany each other; Cataline was prodigal, therefore he was not honest.

Example 3d.

922. A great statesman must possess great sagacity and strict honesty; Richlieu possessed great sagacity but no honesty, therefore he was not a great statesman.

Note, if the second proposition were "Sully possessed both, therefore he was a great statesman," this would be esteemed a simple syllogism.

Example 4th.

923. The latitudes of London and of Paris are different; the latitude of London is $31^{\circ} 30'$, therefore this cannot be the latitude of Paris.

Negative.

924. A *negative conjunctive* syllogism, is that of which the first proposition denies the compatibility of two predicates in the same subject. And the second proposition affirms the application of one of the predicates; and
the

the conclusion thence denies the applicability of the other.

Example.

925. No man can be merciful and cruel ;
Cæsar was merciful, therefore he was not
cruel.

926. Hence, if the conclusion be affirmative, the syllogism is irregular; for, if the second proposition should deny the applicability of one of the predicates, it does not follow that the other is applicable to the subject, for neither may be applicable to it.

Example.

927. No man can be both avaricious and prodigal; Peter the great was not avaricious, therefore he was prodigal.

The fallacy of this conclusion is immediately discerned, as a medium exists between the two extremes here mentioned, and even in the first example, if it were asserted in the second proposition, that Cæsar was not cruel, it could not be concluded that he was merciful, for he might have been barely just.

928. Copulative syllogisms are easily *reduced*

K k 2

to

to simple syllogisms, by altering the first proposition without any alteration of the sense; thus, in the first example of affirmative copulatives, we may say, *a meek man is always humble.* And in the third example we may say, *a great statesman should be sagacious and honest. Richlieu was only sagacious, therefore he was not a great statesman.* So in negative copulatives we may say, *a merciful man cannot be cruel, &c.*

Of Disjunctive Syllogisms.

929. A disjunctive syllogism is that in the first proposition of which, the predicates are *disjunctively affirmed* of the subject, in the first premis; but *one* of them is affirmed in the second proposition and the *other* denied in the conclusion. Or conversely, *one* of them is denied in the second proposition, and the other affirmed in the conclusion.

930. Hence, a *denial* or *alteration* of the statement of *one* of the predicates in the first proposition, must occur either in the second proposition, or in the conclusion; the other predicate remaining unaltered.

Example.

Example.

931. The testimony of the apostles to the miracles of Christ, was either true, or it was false ; but many circumstances prove it *not* to have been false, therefore it was true...

Here, a *denial* of the statement of *one* of the predicates of the first proposition, occurs in the second proposition, for it is asserted *not to be false*, and in the conclusion, the other predicate, *it was true*, remains unaltered. And if the second proposition were, *but it was true*, then the denial or alteration would be made in the conclusion, *therefore it was NOT false*.

932. Hence the irregularity of the following syllogism. It either rains, or it does not rain; but it rains, therefore it does not rain.

933. Here there is no alteration of the statement of the predicates ; in the first proposition the conclusion should be, it does not rain, which being harsh language, shews that the predicates should not be so proposed, as to render the alteration of one of them harsh and uncouth ; hence this syllogism should be thus

It rains

K k 3

stated :

stated: either it rains or it is dry weather; but it rains, therefore it is not dry weather.

934. Another general rule respecting these predicates is, that one or other should be *applicable* to the subject, for if neither be applicable, the proposition is false and should be denied *in toto*.

935. Lastly, the predicates should be so opposed to each other, that no medium can be found between them. Thus it may be said of Cæsar, *that he was either an usurper or a lawful prince*. But if it were said of Peter the First, *that he was either the ally or the foe of England*, the proposition would be false, for he was neutral.

Of Conditional Syllogisms.

936. A conditional syllogism, is that of which the first proposition contains two branches, connected by a conditional conjunctive, or its equivalent. The first branch contains the condition, and is called the *antecedent*, and the other branch the *consequent*. So that the consequence of the syllogism is exhibited in the latter part of the first proposition,

Example.

Example.

937. If the powers vested by the senate in Pompey were unconstitutional, Cæsar was not an usurper; but these powers were unconstitutional, therefore Cæsar was not an usurper.

938. Hence, if the *antecedent be granted to be true* in the second proposition, the consequent must be allowed to be true in the conclusion, as in the above example.

939. And if the *truth of the consequent be denied* in the second proposition, that of the antecedent must also be denied in the consequence.

Example.

940. If the Alcoran be true, the Mahometan religion is true; but the Mahometan religion is false, therefore so is the Alcoran.

941. But if the *antecedent be denied* in the second proposition, the consequent may still be true; for other reasons, independent of its connexion with the antecedent, may render it so.

Example.

942. If Nero burned Rome, he was execrably wicked; but he did not burn Rome, therefore he was not execrably wicked.

943. Here the falsehood of the conclusion is apparent; and therefore the consequent is true, notwithstanding the falsehood of the antecedent.

944. If the *consequent be true and granted* in the second proposition, yet the truth of the antecedent cannot be inferred from it, for the consequent may not be necessarily deduced from the antecedent only.

Example.

945. If princes set bounds to their ambition they are happy; Trajan was happy, therefore he set bounds to his ambition.

This consequence is false, for he set no bounds to his ambition.

946. Several other complex propositions may often be converted into the conditional, and considered as such, as *exceptives*; thus *unless you repent you cannot be saved*; or *causal*,

as

as all events are necessary because decreed; or complex, as he that does not study cannot become learned.

SECTION VIII.

OF OTHER FORMS OF ARGUMENTATION.

These it will be sufficient to describe.

947. An *enthymen* is a syllogism, one of whose premises is omitted. Thus *the apostles asserted that Christ had risen from the dead, therefore he really did rise after his death.*

948. An *epicherema* is a syllogism, to one or both of whose premises, its proof is added. *The apostles asserted that Christ had risen from the dead, for they saw and conversed with him after his resurrection, therefore his resurrection was not a fiction.* The oration of Cicero for Milo may be reduced to an *epicherema*. See Chambers, *epicherema*.

949. *Sorites* is a series of propositions so disposed, that the predicate of each is the subject of the next, until the conclusion is formed of the last predicate, and the subject of the first proposition. This argument is
much

much used by geometricians, and vehement orators.

Example.

950. The apostles proclaimed the resurrection of Christ; proclaiming the resurrection of Christ, they were persecuted by the Jews, and gained nothing; being persecuted, and yet gaining nothing, they must have been sincere; being sincere they were therefore worthy of credit.

951. The first branches of this argument, namely, the proclamation &c. and the persecution, being matters of fact, cannot be proved but by testimony; but the last being an inference from reason, may be converted into a syllogism; thus *they who suffered much and gained nothing by their assertion of a fact they witnessed, must be deemed sincere, but the apostles suffered much, &c. therefore they were sincere.*—Then *whoever are sincere (that is, have no motive to assert a falsehood,) are worthy of credit, but the apostles were sincere, therefore, &c.*

952. Hence, where not matters of fact but mere reasoning, is the subject of this argument,
it

it is in fact abridged syllogisms, each step consisting of the middle term of another syllogism, connected with the conclusion of the last. Thus in the following Sorites, *a miser covets much, he that covets much wants much, he that wants much is miserable, therefore a miser is miserable.* The syllogisms are, *a miser covets many things, he that covets many things wants many things, therefore a miser wants many things.* Again, *he that wants many things is miserable, but a miser wants many things, therefore, &c.*

953. But note, that to render this argument conclusive, no part of it should be equivocal; thus the following is faulty: *he that drinks much sleeps well, he that sleeps well does no evil, he that does no evil pleases God, therefore he that drinks much pleases God.* For, it is evident that he alone that does no evil, having it in his power to commit or avoid it, pleases God, otherwise stones would please God.

954. A *dilemma* is an argument consisting of two or more branches, into which the subject is divided, and extending to the whole the conclusion formed on each branch.

Example.

Example.

955. An ancient philosopher, to prove the misery of human life, reasoned thus: men either obey their passions or they resist them; if they obey them they must be unhappy, for they can never satisfy them; if they resist them, they must also be unhappy, as they must live in a constant state of self denial, therefore human life is necessarily miserable.

956. To render a dilemma perfect, its disjunctive branches should exactly include the whole subject, so as to exclude any other branch, and the conclusion of each should be necessary. Hence the following is defective :

Example.

957. A wife is either beautiful, and then she will make her husband jealous, or she is deformed, and then she will disgust him; then a man should take no wife. Here it is plain that there is a medium betwixt beauty and deformity, and that women may be beautiful, and yet so modest as to afford no just cause of jealousy.

958. *Induction* is an argument, by which
from

from the observation of any property in numerous individuals of the same species, it is inferred that it exists in all the other individuals of that species ; or by observing certain properties in all known species of bodies of the same class, it is inferred to exist in all other unknown species of that class ; or by observing certain properties in all known bodies, it is inferred to exist in all bodies ; so that in fact, except with regard to individual substances of the same species, it is only an argument from analogy.

SECTION IX.

A VINDICATION OF THE SYLLOGISTIC MODE OF REASONING.

959. Having treated so amply of syllogisms, and thereby claimed so much of the attention of the reader to their structure, and the laws of their constitution, it cannot be deemed unreasonable to vindicate their utility against the objections of so great a master of reasoning as Mr. Locke. The principal writers amongst ourselves it is true, as Watts, Duncan, and lately

lately Mr. Dralloc, have paid no regard to the censures passed on this mode of reasoning, for they have not overlooked the laws by which they are governed; but they have taken no notice of the objections made to their use, which compels me to undertake the task of removing them.

960. Mr. Locke on entering on this subject, barely professes to "entertain some doubts, whether syllogism be the proper instrument of reason, and the most useful method of exercising this faculty." But he soon becomes more confident of its inutility; he tells us, "that if we observe the actions of our own minds, we shall find that we reason most clearly, when we only observe the connexion of the proof, without reducing our thoughts to any rule of syllogism, and therefore we may see many men who reason most justly, who know not how to make a syllogism." To perceive the fallacy of this objection, it is only necessary to observe, that a syllogism is nothing more than a statement of two propositions, from which a third may be inferred; now the connexion or disconnexion of which Mr. Locke speaks, cannot
be

be discerned, but by means of two such propositions, either explicitly expressed, as in a formal syllogism, or implicitly contained in a compound proposition. Thus, if I mean to prove that a tyrant cannot be happy, the proof I adduce of the disconnexion of happiness and tyranny, is the fact of a tyrant's being hated by his subjects, and thus reason syllogistically. *A sovereign hated by his subjects cannot be happy, but a tyrant is a sovereign hated by his subjects, therefore a tyrant cannot be happy.* The common inartificial manner of expressing this argument is, *a tyrant cannot be happy, for he is hated by his subjects*; but this is a compound causal proposition which equally involves two propositions, as shewn No. 198, it being presupposed, and therefore needless to assert the general proposition, that a sovereign hated by his subjects cannot be happy. The only difference, then, betwixt this form and the former syllogism, is, that in the syllogism nothing is presupposed, every proposition on which the inference is grounded is fully expressed; but in the compound inartificial form, one proposition is presupposed, and its expression therefore deemed needless, and

and the other two are involved in one phrase. In the *mind* the connexion with the proof is exactly the same in both forms. In the former, the reasoning is developed in express words, in the latter enveloped. In the former, each proposition is distinct, so that if the connexion or disconnexion be controverted, the opponent may deny either proposition; the latter has the advantage of being more concisely presented, but the opponent, allowing some part of the compound proposition to be true, is more embarrassed to disentangle it from the part he may deem false. This inconvenience Mr. Locke himself has experienced, in his dispute with the bishop of Worcester, which obliged him to have recourse to a syllogism. He entirely mistakes the use of syllogistic rules, in stating, that it is imagined that men learn thereby to reason more justly. This is far from being their general use; they direct men, not how to reason, but to express the purport of an argument more distinctly; to detect errors in reasoning, and to exhibit in a narrow compass the several propositions which, in a long discourse, may have been so dilated, as to escape the memory or distract the

the attention. In short and plain arguments, where no contradiction is apprehended, the syllogistic form would undoubtedly be superfluous, tedious, and even ridiculous; but still the syllogism exists in the mind, else the reasoning would not be just; the mind discerns the connexion of the extremes and middle term *simultaneously*; but it can be expressed in words, only successively, and the forms of expression may be more or less explicit.

961. In some cases the syllogistic art teaches how to reason; for after the properties of a subject are known, it teaches to range them in the form most proper to solve the question, as will be shewn hereafter. }

962. The syllogistic form not only shews how to express an argument most distinctly, but also in what respect the arguments of an adversary are fallacious: this use is so important, that in many, even amicable controversies, carried on in a loose and diffuse manner, the reduction of arguments to the syllogistic form has been demanded. Thus, in the famous conference of *Beza*, with the Lutheran professor *Jacobi*, at Montbeliard,* *Beza*

* Colloq. Montis pelgartens, 45; and Bayle, *Beza*, English, p. 792.

entreated him to present his arguments in the syllogistic form.

963. This use is in some sort acknowledged by Mr. Locke, but restricted to cases which very seldom occur: his words are, "their (syllogisms) chief and main use is in the schools, where men are allowed, without shame, to deny the agreement of ideas that do manifestly agree." This reflection on the schools, is certainly too general; such a shameless denial never happens, except where it is imagined some sacred mysteries of religion are concerned: these some think contrary to, others above reason, and yet true; "or out of the schools to those who from thence have learned, without shame to deny the connexion of ideas, which even to themselves is visible."*

Can this apply to such men as Beza and Jacobi? can it apply to Mr. Locke himself, who, in his Reply to the Bishop of Worcester,† to refute his lordship's assertion, that the nature of man in Peter, is the common nature of man, &c. says, "whatever is in Peter exists in Peter, but whatever exists in Peter

* It not this the language of an inquisitor?

† P. 135, 1st edition, 8vo.

"is

“is particular, and it confounds my understanding to make a general particular;” which in effect is the same as saying, *therefore a general or common nature does not exist in Peter*. His reasoning, in the whole of this controversy, would have been infinitely less tedious and perplexed, if he had deigned to adopt the precision of the schools.

964. But, continues Mr. Locke, “to infer “is nothing, but by virtue of one proposition “laid down as true, to draw in another as “true; that is to see, or suppose, such connexion of the two ideas of the inferred “proposition.”

This account of the nature of inference is surely incorrect: in all inferences there necessarily are three propositions, one stating the agreement of the middle term with one of the extremes, and another stating its agreement with the other extreme. The second proposition, therefore, is not the inference; this results from the joint consideration of both propositions.

965. To explain himself further, our illustrious author lays down the following proposition: *men shall be punished in, another*
L 1 2
world,

*world, and thence (says he) let it be inferred,
 that men can determine themselves.* Here, in-
 deed, two propositions are laid down, but it
 cannot be said, that the second is inferred
 from the first, the connexion not being as
 yet apparent; he continue, "the question is,
 "whether the mind has made the inference
 "justly;" it surely could make none if it
 proceeded no further. "If it has made it by
 "finding out the intermediate ideas, and
 "taking a view of the connexion of them
 "placed in a due order, it has proceeded ra-
 "tionally." Now the connexion and true
 order of the intermediate ideas that draw in
 (as he calls it) the conclusion, he states thus,
 "Men should be punished—God the punisher
 "—just punishment—the punished guilty—
 "could have done otherwise—freedom—self
 "determination. Now," says he, "I ask
 "whether the connexion of the extremes,
 "(that is, betwixt the idea of men's punish-
 "ment in the other world, and freedom and
 "self-determination,) be not more clearly
 "seen in this simple and natural disposition,
 "than in the perplexed repetitions and jumble
 "of five or six syllogisms."

966. I frankly own, that the mode of reasoning here exhibited seems to me much less clear, and apparently less connected, than if the substance of it had been presented in the syllogistic form; thus, *men shall be punished in the next life, and God will be the punisher. Now punishments inflicted by God must be just, therefore that punishment must be just. Again, if the punishment be just, the punished must be guilty; but God being the punisher, the punishment must be just, therefore the punished must be guilty,—3d. If the punished are guilty, they must have had the power of acting otherwise than they have acted; but that they are guilty has been just shewn, therefore they had the power of acting otherwise. Lastly, the power of acting otherwise than one has acted, is what is called freedom, or the power of self-determination; but these men have had the power of acting otherwise, as just seen; therefore they had the power of self-determination.* Here there but are four syllogisms and no jumble; I appeal to every reader, whether the reasoning be not clearer, and its links better connected, than in the view exhibited by our author.

967. 2dly, Our author thinks it an insu-

L 1 3

perable

perable objection to syllogisms, that many, all over the world, reason with great clearness and accuracy, without knowing what a syllogism is. And, in truth, most mankind reason justly on the common incidents of life, without knowing what a syllogism is, just as they speak without knowing the laws of syntax, and speak prose without knowing what prose is; yet, though they know not the word, they practise what it signifies, when from two propositions they infer a third; and this they must do, whenever they reason, in whatever form or garb of words the propositions may be enveloped. Yet, how often do they reason inaccurately, without perceiving that they do so, by not reducing their opinions to the syllogistic form? Thus most nations are persuaded, that they should give implicit credit to the opinions of their ancestors: if you ask them whether they should believe them, whether true or false? many will answer, (though with some hesitation, as I have often observed,) that they believe them because they are true. Now a single syllogism will discover the weakness of this ground of belief; *these are the opinions of our ancestors :*
all

all the opinions of our ancestors are true, therefore these are true.

The second proposition will (as it has often done) embarrass them: to allow it, they plainly perceive, would be to suppose their ancestors infallible, and consequently beings of a superior nature; to deny it, would be to subvert the foundation of their belief. It must reach to all their opinions or to none, since no line of distinction is drawn.

968. But Mr. Locke tells us, “ a country
“ gentlewoman easily understands it is not
“ safe for her to go abroad thinly clad, when
“ it blows from the S.W. and threatens to
“ rain, without forming a syllogism, and sees
“ the probable connexion of that wind with
“ rain, and of rain with catching cold, with-
“ out the fetters of several syllogisms.”

Here we plainly see the source of his mistake; he supposes, that syllogisms formed in the mind, must be incumbered with the same train and succession of words in the mind, as when produced in language; whereas, the contrary is evident;* since the expression of

* See the excellent and profound remarks of Dr. James Gregory, 2 Mem. Edinb. 240 and 241.

the propositions, substantially the same, is nevertheless quite different in different languages and idioms. Thus, in English and Latin, two negatives are equivalent to an affirmative: in French and Greek, they are not, but rather deny more strongly. It appears to me, that things, and the sentiments of men concerning them, are conceived all over the world, in the same uniform manner; the expression alone is varied, by reason of the sundry occasions, which originally gave rise to it, and rendered it intelligible. When propositions contain nothing unusual, the connexion of many of them with each other, is seen all at once, as is acknowledged by Locke himself.* “How, as it were, in an instant, do our minds, with one glance, see all the parts of a demonstration, which may very well be called a long one, if we consider the time it will require to put it into words, and step by step to shew it to another.” It is in this faculty of seeing the connexion of many things at once, that mental capacity and comprehension consists; a faculty whose

* Book ii. chap. ix. sec. 10.

extent varies in various minds, and in the same mind varies as to the relations it extends to ; but of this elsewhere. It is not then contended, that mental syllogisms should contain those repetitions that are necessary, or at least should be briefly suggested, in the vocal, much less those *subsumptive* and illative words, *but, now, therefore*. Nor even, in the vocal expression of reasoning, formal syllogisms need be adduced ; unless in disputation, where the points contested must be set forth with the utmost precision, or in resuming the substance of a long discourse, and presenting its purport in the clearest and most compendious point of view. And thus it has been employed by the ablest polemic writers ; but as an instrument of reasoning, its mental existence is essentially necessary.

969. Our author however alleges, “ that “ in mathematical demonstrations, the knowledge gained thereby, comes shortest and “ clearest without syllogisms ; ” yet Leibnitz, assuredly one of the most eminent mathematicians of his age, tells us, that Euclid’s demonstrations, are for the most part arguments, almost perfectly in form ; and that when
Euclid

Euclid apparently forms enthymemes, the proposition suppressed will be found in the margin.* Wolfius, also an eminent mathematician, says, that nothing is discovered in mathematics but by means of syllogisms.†

970. But (continues Mr. Locke,) “ syllogisms do not help us in finding out proofs, “ or in making new discoveries; the rules of “ syllogisms serve not to furnish the mind “ with intermediate ideas, to shew the connexion with remote ones.” Neither do the algebraic rules teach us how to form an equation: are they therefore to be rejected? If syllogisms do not teach us to find a connexion, (for its existence presupposes a connexion, whether real or imaginary,) at least it teaches us, and forces us to examine and scrutinize a supposed connexion, by exhibiting the links betwixt which it is thought to exist, in the simplest form; nay, by attention to the properties of a subject, the mind is enabled, by

* *Nouv. Essais*, p, 446.

† *Log.* p. 94. and *Clairaut Geomet. Preface*, p. 10. *Dr. James Gregory*, 2 *Mem. Edinb.* 223, says, mathematical demonstration, as we find it in the ancient geometers, is but an abridged chain of syllogisms.

association

affociation or otherwise, to discern a connexion, and draw a conclusion, the justness of which may afterwards be ascertained, by casting the whole into the fyllogistic form.

971. Our great author still objects, that " of whatever use fyllogisms may be in knowledge, they can be of none at all in probabilities." In this also I must differ from him ; it is in estimating probabilities, that its use is most frequent, and most necessary. How do we prove the truth of the books of the old Testament, but by assuming, that it is not probable that Jews should invent, transmit from age to age, and even consecrate, a history, in the main, so disgraceful to their ancestors. But a history of the Jews is so circumstanced, therefore it is not probable that they have invented it, &c. Again, a history not invented, delivers facts as they really happened ; since then the Jews did not invent it, the facts it contains must have really happened, therefore the history that contains them is true.

972. All just historical criticism, all speeches, whether of the deliberative or judicial kind, may be resolved into fyllogisms, and from them borrow their entire convictive force.

973. It

973. It is the latent state in which syllogisms form the foundation of reasoning, that has so far imposed on our great philosopher, as to overlook their existence. It should seem as if he considered syllogisms only in that simple, meagre, formal, unembellished state in which they are exhibited in the schools, and which is as necessary in exact disputation as the simplification of equations in algebra, that the adversary may distinctly see what proposition he may grant, and what he ought to distinguish or deny, and hence the precision required by our law in special pleading, the ignorance of which, in many practitioners, occasioned so much mischief, as to compel the legislature to allow less severe argumentation, but much more tedious and expensive.

974. Nay, our author has carried his dislike to the syllogistic forms so far, that he will not allow them the merit of discovering the weakness of an argument, though he owns he once thought them useful in that respect; but, on a stricter examination, he says he found, "that the coherence of an argument was
" better shewn by subjecting each link to the
" immediate view of the mind in its proper
" place,

“ place, whereby its connexion is best observed, than by syllogisms, which shew the incoherence only to those that are versed in *mood* and *figure*.” Whether his manner of shewing this connexion, be clearer than the syllogistic, I leave to the determination of those who may compare both modes of elucidation, No. 965 and 966. But, as to what he adds concerning *mood* and *figure*, I shall only say, that without any knowledge of them, the incoherence of an argument may indeed be felt, though without that or some equivalent knowledge, in what point an argument hitches, cannot be pointed out; yet in important debates, to be able to point out the rule transgressed, if any has been, or to shew that no rule has been transgressed, if the informality of an argument be insisted on, is surely a considerable advantage; thus, many injuries may be felt, without any knowledge of the law or statute transgressed, but to be able to point it out, is highly advantageous and satisfactory.*

975. I

* Of this we have a remarkable and decisive instance in the Bangorian controversy; See Bishop Hoadly's argument

975. I shall here conclude this tedious, and to me highly irksome disquisition. It is with the utmost regret I oppose so high an authority as that of Mr. Locke; but, on this occasion I cannot but think, that his judgment was warped by the just indignation he felt at the trifling, yet solemn wrangling of the schools in his day, and the over nice attention paid to syllogistic forms; this indignant feeling is easily discerned throughout this whole chapter. His objections to the intricacies of mood and figure, I very willingly allow; they may easily be avoided, as all are reducible to the first figure.

The objections of Dr. Campbell, in the first volume of his excellent Treatise on the Philosophy of Rhetorick, p. 164, being for the most part the same as those of Mr. Locke, need not be mentioned; they are sufficiently refuted by his own practice. For though he tells us, p. 164, that “the method of proving

ment in his answer to Dr. Snape, p. 31; Snape’s second Letter, p. 58; and Prat’s Reply thereto, p. 41; and the syllogism formed by Lord Camden, to explain the statute of frauds; and an obscure case in Carthew. See the case of *Hindson v Kerlay*, 5th George 3d, 1765.

by

“ by syllogism, appears, even on a superficial
 “ review, both unnatural and prolix,” yet, in
 p. 124, he himself, to prove that demonstra-
 tive evidence does not admit a contrariety of
 proofs, forms the following syllogism: “ If
 “ one demonstration were ever capable of
 “ being refuted, it would be by another de-
 “ monstration, this being the only evidence
 “ adapted to the subject, and the only sort by
 “ which the former could be matched. *But*
 “ to suppose that contraries are demonstrable,
 “ is to suppose that the same proposition is
 “ both true and false, which is an evident
 “ contradiction, *consequently*, if there should
 “ ever be the appearance of demonstration on
 “ opposite sides, that on one side must be fal-
 “ lacious and sophistical.” He may, indeed,
 call this argument an epicheirema, if he chuses,
 as each proposition is supported by a proof,
 but it is evidently grounded on a syllogism,
 and if the proofs were disputed, they also
 should be proved by syllogisms. Where, in
 this argument is that *petitio principii*, which he
 says, p. 174, is essential to a regular syllogism?
 If it were, it is extraordinary that the eagle-
 eyed scholastics never discovered this radical
 defect.

P. 181,

Cic. de off. lib. II accit. s. accit. illum qui
necesse est apparere ad Cicinios inquit Sutorius
S. C. L. I. Ann. Cap. pag. 238.

PART IV.

OF METHOD.

976. This is the last and not the least important part of logics, as it indicates, first, the general means of investigating truth.

Secondly, how truths, already known, are most easily communicated.

Thirdly,

Thirdly, how to ascertain truth by controversy.

Fourthly, the means requisite to obtain truth from living witnesses.

Fifthly, the rules to be observed for obtaining a true interpretation of written documents.

It is scarce necessary to mention, that all prejudices derived from ambiguous or fallacious sources, or grounded on erroneous principles, should first be laid aside, if not abandoned; the most exact and extensive knowledge of the facts on which the truth of the subject of inquiry depends, should be attained, precipitation avoided, and all biases from interest and partiality vigilantly excluded.

CHAPTER I.

OF THE GENERAL MEANS OF INVESTIGATING AND COMMUNICATING TRUTH.

SECTION I.

OF THE ANALYTIC METHOD.

977. This consists, first, in stating the subject of investigation in the most precise and
M m unambiguous

unambiguous manner, excluding every thing extraneous to it, and, (if necessary,) defining the terms in which it is conceived.

Secondly, in observing, enumerating, and marking its known properties.

Thirdly, in observing the relation of these properties to each other, and to some known standard, or general tests with which they may be examined and compared.

Lastly, in deducing from such comparison, such facts or other truths as may thereby be discerned, demonstrated or rendered probable, and causes from their effects.

978. As we thus proceed from the simplest and most known properties of an object, to the more complex and remote, and thus to the gradual developement of its nature, as far as it may be known, or the solution of a proposed question requires, this method is styled that of *resolution* or *analytic*.

979. It is thus we learn to *read*, beginning with the sounds attached to the letters of the alphabet, thence proceeding to the syllables formed of those letters, and, lastly, to the words formed of those syllables.

980. In the same manner we learn *foreign languages*.

languages. First distinguishing the various parts of speech, as nouns, and their subdistinctions; then the manner in which their relations are designated, whether by terminations or articles; thence proceeding to verbs, noting their various inflections, according to their relation to time, and to the intention of the speaker; then we attend to those parts of speech which suffer no variation; and, lastly, we learn to ascertain the relation of these different parts to each other, according to the syntactic rules peculiar to each language.

981. So in studying *logick* from preliminary observations on the use, signification, and general relations of words to their objects, we proceed to observations on propositions formed therefrom. Their combination with each other in the act of ratiocination, and the evidence, certainty, probability, or doubt, resulting from the combination; we next learn to detect its various abuses, and mark some false principles which have frequently, but erroneously, been admitted; to which we substitute some general principles of general use in speculative reasoning;

M m 2

and,

and, lastly, we conclude with stating the observations contained in the present chapter.

982. So in analyzing natural bodies, the peculiar province of *chymical science*, we begin by separating, if necessary, every visible foreign particle; we next proceed to examine its bulk or weight by reference to the standard measures or weights of the country, and its specific gravity by its relation to that of an equal bulk of water; then we observe the properties it exhibits, when exposed to heat, whether by distillation, sublimation, fusion, or vitrification; then its relation to various tests, whether acid, alkaline, spirituous, or oleaginous, noting the results of the action of these tests, and the distinct parts separated by them, and the classes of natural bodies to which they are referable. And finally, if possible, recomposing the whole, by the reunion of the parts thus separated.

983. Hence, it is plain, that to attain a knowledge of this science, we must first learn the nature, use, and application of the tests it applies, and the various specific results to be expected from their application to the various known classes of natural bodies.

984. It

984. It is also by this method, that the sciences of numeration, as arithmetic and algebra, must be acquired, gradually proceeding from the simpler to the more compound operations. Geometry also, though taught synthetically, yet is more easily and naturally acquired by the analytic method, as the celebrated Clairaut has shewn, in an excellent treatise thereon. In these sciences, evidence is the proper test of every proposition advanced.

985. In the speculative sciences of metaphysics, ethics, and natural law, the solution of many questions is most naturally obtained, by proceeding according to this method; to illustrate the practice of which, I shall subjoin two examples.

First in *metaphysics*.

986. Suppose the question to be, *whether the mind be a simple substance?* I first state, the meaning I affix to the terms in which it is conceived. *Mind*, denotes the principle or subject of our sensations, ideas, judgments, and other perceptions.

Substance, denotes a being capable of perception.

M m 3

Simple,

Simple, denotes the denial of composition, or a thing whose constitution is an unit in the strictest sense.

Secondly, in examining the properties of mind, I find by consciousness, that it is capable not only of perception, but also of judgment.

Thirdly, attending to the act of judging, I find that to judge, the mind must compare the objects which it connects or disconnects.

Fourthly, I find, that to compare two objects the mind must have them both in its view at the same time.

Whence I argue thus :

To view two objects together, at the same time, they must both co-exist in one and the same single indivisible substance. But, in order to judge, the mind must have the two objects it compares, connects, or disconnects, present to it at one and the same time, therefore, they must both co-exist in a single indivisible substance. The second proposition is proved thus: if the objects compared be not allowed to co-exist in a single substance, then they must be supposed to exist in at least two substances or parts. Now, such a supposition is repugnant

nant to the nature of a comparison, and consequently cannot be admitted.

This second proposition is proved thus: to compare two objects, one existing by the supposition in the part *A*, and the other in the part *B*, they must be both known; but since the mind in this supposition is not a simple substance, but exists in the parts *A* and *B*, the portion of it existing in the part *A*, and to which one of the objects of comparison is present, cannot know what exists in the part *B*, to which the other object is present; otherwise, contrary to the supposition, both objects would exist in one part, therefore it cannot compare them.

This second proposition is thus proved: the parts *A* and *B* are supposed really distinct from each other, therefore, the knowledge possessed by the part *A* is not the knowledge possessed by the part *B*, nor can the part *A* know what passes in the part *B*: therefore, in this supposition no comparison could be instituted, nor consequently any judgment, and yet we are conscious of both, therefore, this supposition is inadmissible, and consequently the mind is a simple substance. See Condillac.

M m 4

Secondly,

Secondly, in morals.

987. It has been maintained, about the beginning of the last century, and supported by some plausible reasoning, that *private vices were public benefits*.

To examine this opinion, let the terms be first defined.

Vices, denote habitual excesses, detrimental to an individual or to the public, without being the objects of criminal law; as *drunkenness, prodigality, avarice, libertinism, &c.*

Private, denotes the vices of some individuals, and not of the *majority* of the society, for then the assertion would be glaringly absurd, as it would be tantamount to affirming, *that public vices are public benefits*.

Public, denotes a majority or plurality of persons.

Benefits, denote advantageous upon the whole.

We next proceed to the examination of the properties of the object in question, which, in this case, are the consequences resulting from vitious habits.

First, it is indeed allowed, that they are hurtful to the individual engaged in them;
but,

but, considering each vice in particular, suppose *drunkennes*, it may be said, that some persons are benefitted by it, for instance, the merchant who imports the wine consumed, the shipwright who constructs the vessel that imports it, the various trades employed in the construction, the sailors who navigate the vessel, and the revenue derived from the importation.

Add to these, the gains resulting to the physician and apothecary, called to remedy the distempers occasioned by this vice, to the druggist who supplies the apothecary, to the merchant who imports those drugs, and to the revenue arising from the duties laid on them.

On the other hand, the mischievous consequences attendant on, or resulting from this vice, are, first, the bodily disorders that originate from it; secondly, the broils, quarrels, outrages, and sometimes homicide, even of his nearest relations, committed by the unhappy victim of this vice; thirdly, the ruin it entails on his family, either by the neglect of the business he may be engaged in, or by the rash contracts he may be seduced to enter into,

into, during the period of his intoxication; fourthly, the inability to pay his just debts, and the numberless embarrassments arising thereby, to those who have had the misfortune of having interest depending on his conduct.

Thirdly, we are now to examine how far, on balancing the consequences of this vice, it may be said to be advantageous or injurious to the public.

First, the wine merchant, shipwright, public revenue, &c. are benefitted by the importation of wine, taken in moderation and sobriety; nay, they will be more benefitted, than if it were taken with excess. For, let us suppose this excess to prevail in a large portion of society, the result will be, that from the inattention and neglect arising from its indulgence, the merchant will very generally remain unpaid, discouraged, if not ruined; at best his sale will be diminished by the sickness or death of his customers, and thus the presumed advantages of this vice will gradually cease: the calamities issuing from it to men engaged in different professions, whether military, legal, ecclesiastical, or mercantile, are

are too obvious to be particularly insisted on, and too numerous to be minutely detailed. The benefits resulting to men of the medical profession, even if real, would be a sufficient proof of the evils it produces ; the numerous disorders incident to human nature, and which flesh is heir to, form a source sufficiently copious for the support of a profession founded on their existence, and the number of whose members, must ever be proportioned to that of the evils they are called to remedy.

Many other vices might be mentioned, which are in no degree beneficial to the public, but the considerations here adduced are fully sufficient to enable us to see the falsehood of the tenet here examined.

SECTION II.

OF THE SYNTHETIC METHOD.

988. Though truth is most easily discovered, and some sciences more easily attained by the analytic method, yet other sciences are more readily communicated by the synthetic method, and some problems satisfactorily resolved.

989. The

989. The sciences most properly communicated by this method, are those that proceed from the most general truths, to those that are subordinate to them, dividing them into distinct classes, and so descending to those that are particular, or least general. Thus the whole collection of truths is gradually unfolded to the learner, and until it is capable of being thus developed, it scarcely merits the denomination of a science.

990. Hence the sciences, to the acquirement of which, this method is best suited, are some branches of natural history, natural philosophy, jurisprudence, ethics, politics, theology, and medicine. Euclid follows this method in his Elements of Geometry.

991. Thus in that branch of natural history which treats of *minerals*, we first divide them into four general classes, earths and stones, which form one class, salts, inflammables, and metallic substances. Then earths are subdivided into their different species, calcareous, barytic, magnesian, argillaceous, &c.; in the same manner the other classes are subdivided, and each kind and species defined.

992. So *jurisprudence* is divided into three
general

general branches, the laws of nature, of nations, and the municipal law of each distinct country; the definition of law in general, and of each of these grand branches being premised.

993. So *medicine*, or the art of healing, is divided into physiology, pathology, hygiene, and therapeutics; each of which admits numerous subdivisions. Nosology, a branch of pathology, is divided by Dr. Cullen into classes, orders, genera, and species.

994. In *natural philosophy*, the general nature of bodies is first stated, then their general properties, as gravitation, elasticity, attraction of cohesion, elective attraction, solidity, liquidity, caloric, laws of motion, &c.; then the peculiar properties of electricity, magnetism, &c.

995. A proposition is said to be proved by the *synthetic* method, when its truth is deduced from truths still more general or better known, as axioms and definitions; this sort of proof is therefore called *a priori*. And thus effects are deduced from their causes. It is thus the existence and unity of the Divine nature has been most ingeniously and accurately proved
by

by Dr. Hamilton, the late Bishop of Oſſory. And thus the ſolution of many queſtions in ethics and jurisprudence has been attained.

996. The explanation I have here given of the analytic and ſynthetic methods, differs indeed from that given by Dr. Watts, but is agreeable to that aſſigned by Mr. Duncan,* Le Clerc, Condillac,† Du Marſais,‡ Port Royale,§ and the moſt approved ſcholastic writers. Mr. Edgeworth well obſerves, that the words ſyntheſis and analyſis, are frequently miſapplied. ||

SECTION III.

OF THE INVESTIGATION OF TRUTH BY CONTROVERSY,
AND THE SUPREME JUDGE OF DISPUTED QUESTIONS.

997. Upon whatever grounds, men by their ſolitary attention form their opinions, they are ſo far biaſſed by them, that they ſee much more clearly the reaſons by which they are ſupported, than thoſe by which they are

* P. 275.

† Vol. i. p. 132.

‡ Logick, 162.

§ Part IV. chap. iii. p. 465.

|| On Education, 2d Edit. vol. i. p. 178.

or may be opposed ; yet, since the solution of all questions that do not admit of a clear and rigorous demonstration, must be deduced from the joint consideration of the arguments that favour, and of those that oppose any particular decision, it is plain that such arguments should be produced and proposed by those who entertain opposite opinions on the subject, for they alone can expose them with the force and clearness of which they are susceptible.

998. Controversies therefore duly conducted, are excellent means of elucidating any question, and settling a true decision; hence in our courts of justice, much stress is not laid on rules or decrees that passed without debate.

999. The rules to be observed in conducting a controversy in the most advantageous manner, are well laid down by the learned, judicious, and highly impartial Dr. Hey, late Norrisian professor at Cambridge, from the first volume of whose lectures I shall extract them, with such additional observations as I think requisite.

“ First, the terms in which the subject in
debate

“ debate is conceived, should be so clearly explained, as that their precise signification should be expressly agreed on by both parties.

“ Secondly, all expressions of self-sufficiency shall be carefully avoided ; he uses such expressions who calls his own cause the cause of God, and his own interpretation the word of God.

“ Thirdly, whoever uses personal reflexions shall be deemed an enemy to truth ; they prevent even just reasoning from being attended to by common men.

“ Fourthly, let no one accuse his adversary of indirect motives.

“ Arguments are to be answered, whether he who offers them is sincere or not ; to inquire into his motives is then useless ; to ascribe indirect ones to him, is worse than useless ; it is hurtful. Sometimes, however, the case is such, that it seems as if we were not bound to take men in the literal sense, when they profess their motives for writing. These are sometimes to ward off danger, or prevent a legal prosecution ; of this sort is the conclusion of Mr. Hume's Essay on Miracles.

“ Fifthly,

“ Fifthly, the consequences of any doctrine
 “ are not to be charged on those who hold
 “ those doctrines, except they expressly avow
 “ them; if from any proposition, absurd pro-
 “ positions follow, it is rightly concluded, that
 “ the original proposition is false, but it can-
 “ not be rightly concluded, that the adver-
 “ saries maintain those absurd propositions;
 “ that is barely a question of fact.

“ Sixthly, it is improper to refer any saying
 “ of an adversary to a party; this is done
 “ when it is said, *this is downright popish su-
 “ perstition, Scotch philosophy, Irish blundering,
 “ rank Tory principle,*” &c.

1000. These rules have very seldom been observed in any controversy; the nearest approach to a perfect conformity to them, may be seen in the controversial correspondence of the late excellent Dr. Priestley and Dr. Price, and also in the amicable conference of the learned Beza and Professor Jacobi at Montbeliard. But of the grossest violation of all of them, innumerable instances may be adduced, even in writers in other respects of the greatest respectability. See those extracted from Bishop Warburton by Dr. Hey, vol. i. p. 467.

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1001. Of

1001. Of the Socratic mode of disputation some excellent specimens may be seen at the end of Leibnitz's *Theodicea*, and in Le Clerc's *Logick*, p. 237, &c. and Dr. Berkeley's *Dialogues*.

1002. Conformity with reason, when clearly and distinctly discerned, or, in other words, when *evident*, is undoubtedly the genuine criterion of truth; but when in complicated or obscure subjects, the appearance of such conformity is the result of an intense, continued, and diversified attention, experience shews us, that somnolency, or some unperceived error, may vitiate our conclusions, and thus we are never certain of the rectitude of the process that led to them, until we have repeated it after some interval, or procure it to be repeated by another; the greater the number of persons who agree in the same determination, the greater our assurance of its truth; it is thus, that in physical, and often even in mathematical subjects, certainty is attained. In the investigation of past facts, perplexed by contradictory or variant testimonies, or attended with circumstances apparently fabulous, and also in moral subjects,

from

from the variety and opposition of the numerous considerations which must be weighed, and carefully attended to, it is often difficult to form that decision which is most conformable to the due estimation of probability in the former case, or to the rules of morality in the latter; we must therefore, as in physics, have recourse to the determinations of others, sufficiently qualified to form an opinion on such subjects, and compare them with our own, if we form any, or with each other if we form none: the less assurance we have of the justice of our own, the more reliance we may possibly repose on the opinions of others, but the stronger our confidence in our own, the less we shall feel ourselves disposed to yield to the decisions that oppose them. It cannot be deemed unreasonable, that when conscious of the purity of our motives, and possessed of sufficient grounds, and means to form an opinion, we should prefer that which is directly founded on our own immediate discernment of its probability, to that formed by others, whose probability can only be indirectly seen, or rather inferred, from the supposition that possibly the *data* on which

N n 2

their

their opinion is formed, have been more correctly appreciated.

1003. Nor can such judgment argue a blameable presumption ; it is only preferring a stronger to a weaker impression : 1000 eyes in the same position and circumstances, can see no further than two equally well conditioned. We have many instances in which the opinion of one individual was found preferable to that of a multitude, equally capable of forming a correct judgment ; the opinion of Lord Chancellor Finch, in opposition to that of the three principal judges of England, was approved by the House of Lords, and held to be law ever since. *Third cases in chancery, duke of Norfolk's case.*

1004. However, it must be allowed, that in cases where the truth of a decision cannot be rendered indisputably evident, the last, and supreme tribunal, to which men can resort, is the free, unprejudiced, and deliberate judgment of men, possessed of sufficient knowledge, and consequently furnished with the due means of forming a decision uninfluenced by authority, and unbiassed by religious zeal, or any party or individual interest, or
other

other depraved motives, in all foregoing ages; for the judgment of one age, particularly of that in which the controversy arose, is rarely sufficient. Such a decision, if it could be had, would undoubtedly impress a conviction little short of a complete demonstration; but though it can never be exactly attained, we may in every age, on many subjects, approximate towards it. Thus, the controversies antiently subsisting relative to idolatry and polytheism, have been so happily terminated and acquiesced in, during ages long preceding ours, as to preclude the necessity of a new discussion. So also the controversy relative to the astronomical systems of Ptolemy, Tycho Brahe, and Copernicus, have long since been satisfactorily composed; so also the controverted systems of Descartes and Newton, and numberless others.

1005. Yet some controversies relative to historical facts, which appeared to have received a satisfactory decision in the last or preceding century, have, since the middle of the last, been again revived, and so successfully, that an opposite decision may now perhaps be deemed better grounded. Among many in-

stances of this sort, I shall mention only one, namely, that which concerns the origin of the Septuagint translation of the Old Testament.

The account given by Aristeas of the manner in which the Septuagint translation was obtained, was with some additional circumstances, admitted without any contradiction from the Christian æra, down to the year 1660, about which time its truth was denied by Dr. Hody, and afterwards by the most learned and sagacious critics, both Catholic and Protestant, as P. Simon, Vandale, Prideaux, Du Pin, Le Clerc, and Fabricius, but since the year 1770, it has been supported by very plausible arguments by Tyschen, Simon de Magistris, Eichorn, and Masch, by whom the objections of the preceding critics have been fairly answered.

CHAPTER

CHAPTER II.

OF THE MEANS REQUISITE TO OBTAIN TRUTH
FROM LIVING WITNESSES.

1006. These are, first, the exclusion of such as are incompetent, and, secondly, examination and cross examination under the sanction of an oath of such as are competent.

1007. Of the qualifications of witnesses, their credibility, and the results deducible from their testimony, when agreeing with or varying from general experience in similar cases, we have already treated from No. 391, to No. 655, but shall be here somewhat more particular.

1008. A witness is a person fit to be admitted to prove the existence of a fact, which he affirms to have known by the testimony of his senses, or the non-existence of a fact, which, without being perceived by him, cannot be supposed to have existed.

1009. He may also prove the general re-

N n 4

pute

pute or opinion concerning a fact, which, by its nature is incapable of being proved by the testimony of sense, or need not be so proved.

1010. Thus he may prove the existence of a fact he hath seen, or of a shot he hath heard, or of arsenic which he hath tasted or known by appropriate tests, or the non-existence of a shot, which if it had existed, he must have heard, &c.; or the identity or similarity of an object or objects with which, or one of which he had been previously acquainted; or (in my opinion) the existence of any past fact, of which he hath a moral certainty.

1011. Testimony given in a court of justice, is in legal language called *evidence*; hence, I shall here use it in that sense.

1012. Hearsay evidence is not admitted, except, first, it is itself the object testified, as the hearsay or general repute of a *pedigree* or *prescription*, or custom, things which cannot otherwise be known; or the declaration of a deceased tenant, that a certain piece of land is parcel of the estate which he occupied; the state of a family, &c.; or general facts, as a rebellion, plot, &c.; or the character of a culprit.

1013. Secondly,

1013. Secondly, of the declaration of a dying man, of the person that murdered him; for it is highly improbable that he would then be guilty of a falsehood; but the declaration of a dying criminal is rejected, as he is infamous.

1014. Thirdly, of the voluntary confession of a criminal; for though a man is not permitted to be a witness for himself, he is the very best witness against himself.

Fourthly, in case of a rape, after a woman has given evidence of it; here relatives are admitted to prove her having told them of it, about the time it happened.

1015. But an offer to pay a sum of money in order to get rid of an action, is not admitted as evidence; for, as Lord Mansfield often said, it ought to be permitted to men to buy their own peace, without prejudice to them, if such offer did not succeed.

1016. The reason on which this rule is grounded, is that no evidence shall be given on oath, of what another man said who was not upon oath.*

* See McNally, 303.

1017. I have said *a person fit to be admitted*, for a person not fit to be admitted to be a witness, cannot in most cases be justly supposed to be a witness, or at least a *credible* witness. Now, a person whose credibility cannot, consistently with just general principles, be even supposed, is what is called an *incompetent* witness.

1018. The impropriety of admitting a person to be a witness, or in other words his incompetency, must arise from one or other of these four causes; first, want of understanding; secondly, an apparent disregard to veracity; thirdly, a violent inducement to depart from it; fourthly, the inconsistency of such testimony, with a superior obligation.

1019. A person, in whom these disqualifications exist in a high degree, is said to be *incompetent* to be a witness; but if they exist only in an inferior and more doubtful degree, they affect only his *credibility*; he may be admitted as a witness in our courts of law, but his credibility is left to the decision of a jury.

1020. I shall here barely sketch out the most rational rules that have occurred, under each

each of these heads, leaving the minute detail of their highly diversified application to the excellent tracts on evidence, both in civil and criminal cases, of Lord Chief Baron Gilbert, edited by Mr. Capel Lofft ; and the still later of Mr. Peake ; and that on criminal cases only, by Mr. M'Nally, who is eminently distinguished by his profound knowledge of this branch of his profession.

SECTION II.

FIRST DISQUALIFICATION ; *want of Understanding.*

1021. As all witnesses are examined in a court of justice upon oath, it is necessary they should be sensible at the period of their examination of the obligation it lays them under, and of the penalties incurred by its infraction.

1022 Consequently, it is necessary, first, that they should be of an age sufficient for the development of their intelligence. This age never exceeds fourteen years, for they then cease to be children, but a sufficient degree

degree of intelligence often takes place at a much inferior age ; and whether it does so, is very properly left to the discretion of the judges, to whom, in all cases, belongs the determination of competency.

1023. Secondly, it is necessary that the understanding should not be disordered either by ideocy, lunacy, or drunkenness, either at the period of attestation, or of examination.

1024. Thirdly, it is necessary that the witness should be able to explain himself, at least by a sworn interpreter, at the period of his examination.

1025. Hence, even dumb persons who can explain themselves only by gestures, are allowed to be competent, if sensible of the obligation of an oath.

1026. Under this head, we may likewise arrange men, (if any such be found,) who disbelieve the existence or providence of the Supreme Being, for they cannot be bound to veracity by the obligation of an oath.

SECTION

SECTION III.

SECOND, DISQUALIFICATION, *apparent Disregard to Veracity.*

1027. As witnesses are examined solely for the purpose of elucidating the truth of facts by their testimony, and as this can never be supposed attainable with certainty, from the testimony of those who have given signal proofs of their disregard to it, it is evident, that such persons can never be accounted competent witnesses. Hence, persons convicted of perjury, and judgment had thereon, or of forgery, or of coining, or attainted for a false verdict, are incompetent. Other incompetences have been created by statutes, but these not being grounded on natural reason, are here omitted.

SECTION IV.

THIRD DISQUALIFICATION, *a violent Inducement to disregard Veracity.*

1028. The general inducements to depart from truth, in bearing testimony, are, first, a
certain

certain loss, danger or detriment, ensuing from its truth, either to the life, liberty, reputation, or property of the attester. But a mere possibility of such loss or detriment, cannot be looked upon as a preponderating bias. Nor is a consequent loss to one's nearest relations or party considered as productive of such a bias.

1029. Secondly, the acquisition of an immediate advantage to one's self, in consequence of the testimony, but the gain of one's nearest relations is not thought sufficient to exclude his testimony.

1030. Hence the general rule is, that no man shall be admitted to bear witness in his own cause.*

1031. Thus

* The justice of this rule appears to me very doubtful. The numerous exceptions from it, both at common law and by statutes, and the discordant opinions of the ablest judges, and their frequent embarrassments concerning its admissibility in many cases, evidently prove it to be so. It should seem, that such testimony should be admitted in all cases, and that its *credibility* only is indefinitely weakened, and of this a jury is the proper judge. Moreover, our courts daily admit the testimony of the nearest relations, and of the most violent bigots to party, though in both cases

1031. Thus a man is not admitted to prove that his name to a note or bond has been forged;* yet Holt, one of the ablest judges that ever sat on a bench, says a man may be a witness, to set aside his own bond obtained by duress;† and that a man shall be a witness for himself, where the nature of the thing allows him no other evidence.

1032. But if two men are severally indicted for perjury, with respect to the same fact, one is permitted to be a witness for the other, as the acquittal of the latter will not serve to acquit the witness.

1033. Yet at common law, a man was permitted in some cases to swear, that he owed nothing to a plaintiff, when six, eight, or twelve others swore they believed his oath to be true; this was called *wager of law*.

cases the temptations to deflect from the exact line of truth, may be as violent as, at least, that of a moderate direct interest. And in courts of equity, and in affidavits, are not men admitted to bear witness for themselves. Christ, it is true says, if I give testimony of myself, my testimony is not true, John v. 31; yet *true*, signifies only *worthy of belief*, that is, absolutely persuasive. See Grotius on this verse.

* Peake on evidence, 147.

† Queen v Sewel, 7 Mod. 119, 120.

1034. So

1034. So also, when in consequence of his testimony, a person should gain some direct or immediate advantage to himself, he is not in general judged competent to be a witness, but if the advantage is to accrue to his nearest relatives, he is admissible, but his credibility is left to a jury.

1035. Thus, if a man is promised a lease if the land be recovered; this excludes his testimony.

1036. But if a creditor devises a debt to his debtor, and the executor delivers the bond to the debtor, who cancels it, and afterwards the validity of the will questioned, on a doubt whether the testator was *compos* or not, the debtor may be a good witness of his sanity, because the obligation being cancelled, he is no longer interested, and neither his competency, nor even his credit is affected, if not suspected of having fraudulently promoted the fabrication of the will.

1037. The men of one county, city, or barony, may be admitted as witnesses of its rights, privileges, or immunities, as they have no private interest therein. But not of its boundaries in a suit carried on with another
county,

county, &c. because they are then concerned in point of interest.

1038. Also the interest that excludes a man from testimony, must be *certain*; hence, an heir at law may be a witness, as his interest is precarious. But not he that hath a vested remainder.

1039. Moreover, the interest that excludes a man from testimony, must exist at the time the fact to be proved happened, or be thrown upon him afterwards by operation of law, or by the act of the person who requires his testimony. For if, after the event, the witness becomes interested by his own act, without the interference or consent of the party by whom he is called, such subsequent interest will not render him incompetent; for, otherwise it would be in the power of the witness, and often in that of the opposite party, to deprive the person wanting his testimony, of the benefit of it. Thus though a prosecutor lays a wager, that he will convict the defendant, yet he shall be a competent witness; for, otherwise, by a juggle betwixt him and the defendant, the defendant might be acquitted.

1040. The interest must also continue to

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the

the time of the trial, and therefore this objection may be removed by a *release* before the trial.

If a servant is beaten by a stranger, and the master brings an action of trespass against the stranger, the servant is admitted to be a witness.

1041. It also often happens, that to refuse a witness, because he is interested, would occasion a greater evil than his admission; for, the evil arising from his admission is *precarious*, as his credit is still open to the consideration of a jury; but his exclusion would often operate a *certain* evil, as better proof cannot, from the circumstances of such a case, be expected.

1042. So, a person robbed, is allowed to witness that fact, in order to charge the hundred under the statute of Winton, (even at common law;) for otherwise the benefit of the statute might be excluded, as no other person might be present.

1043. So, a person who bribed another at an election, is a competent witness to prove the fact, though he thereby frees himself from the penalty.

1044. In

1044. In public prosecutions for injuries, the party injured, may in most cases be a witness, for no private advantage accrues to him, either directly or consequentially.

SECTION V.

FOURTH DISQUALIFICATION, *the Opposition of a superior Obligation.*

1045. It is the duty of all the members of a society, to promote the execution of justice by their testification, when necessary, for its attainment; yet there are duties of a still higher nature, whose existence precedes even that of all conventional societies, and cannot be superseded by them. Such is that resulting from the conjugal union, (and, in my opinion, also that arising from parental relation,) which may oppose that of testification or or against the party that stands in that relation to the other, where a personal injury does not intervene.

1046. An artificial connexion is also formed in all civilized societies, between persons pro-
 O o 2 fessionally

professionally employed in conducting suits, and those who for this purpose confide in them, as barristers, attornies, and solicitors. To preserve this confidence inviolate, such persons are excused from giving testimony as to facts thus disclosed to them.

SECTION VI.

OF TESTIFIABLE OBJECTS.

1047. Testifiable objects are those which are perceived by the organs of sense, or which if they existed, must have been so perceived, or otherwise certainly known.*

Or, secondly, the general repute of objects which are incapable of being perceived by sense.

Or, thirdly, the identity of an object viewed at different periods of time.

Or, fourthly, the identity of causation.

Of the second head I have already treated, No. 1012, 1016. Hence, I shall here consider only the two last.

* This last, Gilbert calls *deductive* certainty. Lofft's edit. p. 6.

Of

Of the Identity of an object.

1048 That the man I have seen this day is the same man I have seen yesterday, or last year, or two more years ago, I infer with that degree of confidence which is called certainty, from the undescribable characteristic similitude, even though in some respects degraded or imperfect, betwixt his features, size, voice, &c. actually observed, and those which I sufficiently recollect to have formerly observed. Such a similitude being very rarely found, between two individuals of the human species, the knowledge founded on such recollection, is called an *acquaintance*. That it is sometimes liable to mistakes, see the case of Martin Guerre, in *Causes celebres*, vol. i.

Of the Identity of Causation.

1049. The belief of this is founded on the same principle as in the last case, but somewhat weakened; for, it being well known, that certain effects most commonly bear characteristic marks of the individual cause from whence they proceed, it comes to pass that a striking similitude betwixt an object presented

to a witness, and other objects already well known to him, to proceed from a given cause, must impress on his mind a firm persuasion or belief, that the object now presented to him, proceeds from the same cause; or, in other words, the identity of the cause of certain effects, may with confidence be collected from a view of the characteristic marks antecedently known to be peculiar to effects proceeding from that cause.

1050. Yet, as it is also known, that certain effects have frequently been so well counterfeited, as to be difficultly distinguishable from those that are the genuine effects of a given cause, the persuasion of their real origination from that cause, is not altogether as strong as that of the identity of an individual, seen at different periods of time.

1051. Of the objects whose similitude and peculiarity of manner is capable of producing this persuasion, I know but two, namely, first, that of written characters, (more particularly if the writing be of considerable length,) with other writings recollected by the beholder, and known to have been indited by a given person, either by having seen him write, or,
from

from consequences necessarily connected with the supposition that they were penned by him, and by no other.

1052. And, secondly, that of *style*, whether in prose or verse, painting, engraving, music, or architecture, in distinguishing which connoisseurs are rarely deceived. It is by such general similarity betwixt writings, &c. of the same age or author, that they are distinguished from those of another age or author; of this species of criticism, Montfaulcon and Malone have given remarkable specimens.

1053. With respect to the ascription of a writing to a particular person, two questions have arisen in our law; the first relates to the surest, and consequently the properest method of tracing it to him.

And, secondly, whether, when referred and satisfactorily brought home to him, it may be alleged as a proof or as a presumption?

1054. And, first, with respect to the investigation, two methods have been proposed; the one, grounded on a similitude, discovered by a comparison, instituted by persons not previously acquainted with his hand, betwixt the writing in question, and other writings

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certainly,

certainly known to have been penned by a certain person. This method is now deservedly rejected; for, first, a belief grounded on the result of such comparison, is circuitous, for the writing it is compared with must first be proved by other witnesses; and, secondly, it is much more frail than that founded on a previous knowledge of his hand,—the persuasion that originates therefrom, arises from a more settled and firmer association; now, in every species of evidence, the strongest of that species is very properly required.

1055. The second, now generally adopted, is the assurance of a sworn witness, that he is acquainted with the hand, and thence believes the writing produced, to be that of a particular person; but he must explain the reasons on which he grounds his belief; for instance, because he has frequently seen him write, or avow his writing, either expressly or virtually; or has corresponded with him; for it is plain he would not direct an answer to a person, but on the belief that the letter he received was from that person; and this belief may be confirmed by mutual replies, and the frequency of the correspondence: this evidence
is

is immediate, being founded on instantaneous recollection.

It is true that the writing of any man may be forged ; but forgeries are rare, and consequently improbable ; they should therefore be proved, or at least be strongly inferable from circumstances.

1056. In critical inquiries the similitude or discrepance discovered by a comparison of hands, and other peculiarities, is justly admitted, being the best evidence that can be had in judging of ancient manuscripts.

1057. In answer to the second question, I am disposed to think, that the mere *belief* of a witness, however well grounded can in no case be looked on as a full proof, independently of other circumstances connected with it ; but, with them, it may be a corroborating proof ; for *belief* can never be equal to *knowledge*, which is grounded on the immediate testimony of sense ; as when a person has seen another penning the writing in question : this then being the best evidence, an interior evidence can only be looked upon as a *violent presumption*, which, in *civil* cases, being uncontradicted, is equivalent to a full proof ;
but

but not in *criminal* cases, where a decision can never be re-examined or revoked, except privacy be a circumstance almost necessarily connected with the crime; or, that other circumstances naturally concomitant with, or consequent to it, or leading to it, also concur, and clearly enforce the belief of it; unless these also be satisfactorily explained.

SECTION VII.

OF CROSS EXAMINATION.

1058. To cross examine a witness, is to scrutinize his credibility, or even his competency, after his testimony has been given, if, by some mistake, his competency had been at first overlooked, or its defect not known.

1059. Now, his credibility may be either impaired or destroyed; first, by his general repute and character among his neighbours; or, secondly, by the inconsistency of the facts alleged by him, or of the different branches of his testimony; or, thirdly, by the inconsistency of his testimony with that of other witnesses,

witnesses, either more, or at least equally credible, or more numerous and equally credible; or, fourthly, by an intemperate zeal for his sect or party, or even his laudable partiality for his near relatives; or, fifthly, by apparent aversion, hatred, or malevolence, to the party against whom he is produced; or, sixthly, by the connexion of his testimony with his interest, or that of his relatives, or party; or, seventhly, his acceptance of a reward for his testimony; or, eighthly, his previous declarations of his disbelief of a God, or future rewards or punishments.

1060. In general, we may remark, that a witness should not be cross examined to facts, which do not relate to that or those of which he has given testimony.

SECTION VIII,

OF THE DISCREDIT* ARISING FROM DISREPUTE.

1061. The evidence to destroy the credit of a witness, must be that of persons who

* Or rather *discredibility*, a word wanting in our language, as *incredibility* relates to things, not persons.

have

have known his *general character*, and take upon themselves to swear, from such character, that they would not believe him upon his oath; but they are not at liberty to charge him with any particular transaction, as he may not come prepared to explain it.

1062. Yet it is said, that the party interested to support his character, may call upon those who disparage it, to state the grounds on which their opinion is founded, which seems to me inconsistent; for *reputation* is the ground on which they refuse him credit, and not any particular which he is not prepared to explain or justify.

1063. But declarations made by him on the same subject, contrary to what he swears on the trial, may be given in evidence to impeach his credit.

1064. If a witness is called, and another is produced on the opposite side, to impeach his credit, the credit of the first is lessened, in proportion to the credibility of the second.

1065. If a witness is produced, and another is offered to destroy his credit, a third witness may be called to support it: the joint credibility

lity of the first and third witness is inversely, as the credibility of the second.

1066. The party who produces a witness, is not allowed to impeach his credit by *general* evidence; for, if that were permitted, he might destroy his credit, if his testimony were unfavourable, and make him out a good witness if his testimony were favourable, having the means of destroying his credit in his breast.

1067. But if a witness should allege a fact, unfavourable to the party that produces him, that party may call others to contradict him, as to that particular fact; for such facts are evidence in the cause, and the other witnesses are not called, in order directly to discredit the witness, but the impeachment of his credit, as to such facts is merely incidental and consequential.

SECTION

SECTION IX.

OF QUESTIONS WHICH A WITNESS IS REQUIRED TO
ANSWER UPON A CROSS EXAMINATION.

1068. It is useless to ask a witness whether he believes the existence of God ; for if he does not, he may swear he does.

1069. In general, he is obliged to answer, according to his knowledge or memory, any question which relates to his testimony antecedently given, or the points in issue, or to his own interest therein, or to the motives by which he is actuated ; for, his answers to these questions tend to elucidate the truth of the facts on which the jury are to decide.

1070. But no question should be put to him, which he is not obliged to answer ; consequently he should not be asked any, to answer which with truth, would be to accuse himself of a crime, or expose him to some punishment ; nor, in my opinion, should he answer such questions, as, if truly answered, might involve him in disgrace, and lessen his estimation.

estimation. For to oblige him to answer such questions, would in fact be putting him to the torture, betwixt the fear of God on the one hand, and the stings of shame on the other. Self-defence is a law of nature, and no law can bind a man to be his own accuser. The arguments for a contrary practice are such, as may be alleged for torture; the only difference is, that corporeal torture may make a man avow a crime which he has not committed, and mental torture may make him deny that which he hath committed.

1071. Nor, in my opinion, should a man be compelled to swear to his belief of any fact not grounded on the direct consequences of his knowledge, or acquaintance with the object in question; but, if he voluntarily avows his belief, he ought to assign, on what grounds he forms it; for these may be very slight; and, even if solid, they rather serve to corroborate evidence already given, than to form a distinct independent proof. For, it is upon the *knowledge* of the witness, his assurance of a familiar acquaintance with the object, and not upon his belief, that a jury are to form their verdict. The senses of the witness
are

are designed to supply the absence of those of the jury; but his belief can only suggest belief.

1072. But a contrary practice hath prevailed. And, indeed, if a man swears, he *believes* that to be true, which he *knows* to be false, he may be indicted for perjury, and justly.

1073. It is said, that *communis error facit jus*. But it is also said, *judicandum legibus et non exemplis*. And the law of reason is part of the law of the land. Judge Foster said, he hoped he should never hear the former rule insisted upon, to set up a misconception of the law in destruction of the law.

SECTION X.

TORTURE.

Torture is a pain inflicted on a supposed criminal, to make him avow his guilt, or to extort from him some other truth with which he is supposed acquainted.

In countries in which it is as yet practised, it is resorted to in three cases; first, on a mere suspicion

suspicion of guilt; secondly, on an imperfect evidence of guilt, to complete that evidence; and, thirdly, to oblige a person already adjudged criminal to discover his accomplices.

But in all these cases it is inhuman, unjust, and fallacious, and in the last case most flagrantly injurious to the community at large.

It is *inhuman*, because men, even when not connected with each other by the ties of civil society, are still connected by the ties of mutual sympathy; to infringe these by inflicting pain without a sufficient cause, is therefore to act in opposition to the laws of our common nature.

It is *unjust*, because even in a state of nature men are not ignorant of that moral law, that forbids them to do to others, without a sufficient cause, that which they instinctively feel, and are persuaded should not, without a sufficient cause, be done to themselves. Now, no man would allow it to be just, that he himself should be subjected to pain, without a sufficient proof of his guilt, or at least, without a probability of procuring him, with his own express or implied consent, an incomparably greater good; as when pain is inflicted

P p medicinally,

medicinally, or chirurgically, by cauteries, or amputation of a limb, &c. The injustice is still greater in a state of civil society. Because as men, by the social compact, whether express or implied, are obliged to protect and support the sovereign authority of the state, the sovereign is reciprocally obliged to exempt them from vexation in every case, in which it is possible for him so to do, unless there be a sufficient cause to expose them thereto.

Hence, in every case, the sufficiency of the cause is the only reason that can be alleged in excuse of the infliction of pain where the guilt of the person on whom it is inflicted, is uncertain. But the expectation of obtaining truth by a mode of proceeding, in which the pain is certain, and the attainment of truth not merely uncertain, but even improbable, cannot be deemed a sufficient cause for having recourse to it. Now, such is the pretended proof or indication obtained by torture, as appears by the testimony of the most experienced judges in the unhappy countries, where pretended laws have invested it with the abused name of justice. Ulpian de Questionibus,

tionibus, leg. 1, says, “ Res est fragilis et periculosa, et quæ veritatem fallit, nam *plerique* patientia, sive duritia tormentorum, ita et tormenta contemnunt, ut exprimi eis veritas nullo modo possit; alii tanta sunt impatientia ut quidvis mentiri quam pati tormenta mallent.” And the benevolent Lewis XVI, in his ordinance of the year 1780, whereby he abolished what was called the *preparatory* torture, recites, that having consulted the best informed magistrates, they related to him, that at a meeting of the most experienced judges in the year 1670, they agreed that torture was useless, and that truth had rarely been extorted by its means. The torture applied to guilty criminals, called the previous torture, to discover accomplices, was by far the most dangerous to the community, as these criminals, to obtain a respite from their torments, and to be revenged of their torturers, frequently accused their nearest relatives, or other persons entirely innocent, who yet were arrested and imprisoned, and sometimes even tortured in consequence of such accusation.

CHAPTER III.

OF INTERPRETATION.

1074. To interpret a written document, is to discover and make known its true meaning; a task, which frequently requires much sagacity and attention, not only when tracts in a foreign language are to be translated into our own, or an explanation of ancient writings even in our own, is attempted, but more especially, when important documents of modern times, and in our own language, on which the regulation or intercourse of society depend, require a clear exposition, such as statutes, deeds, devises, agreements, &c. Leaving however, to critics and annotators, the detail of the principles and numerous circumstances necessary to be attended to, in developing the true meaning of ancient writings, and particularly of the sacred; and to lawyers, an account of the grounds on which they found the interpretation of legal documents and instruments; I shall barely mention

tion the principal maxims and rules, in conformity to which, a just interpretation must be established in every case in which they can be applied ; availing myself, in particular, of those which have been laid down and approved of by our courts of justice during a series of ages.

1075. In forming an interpretation, our attention must not be confined to words, but must likewise be extended to entire sentences, clauses, and phrases ;* and the resulting sense of all the parts when compared with each other.

1076. The principal maxims to be attended to, in explaining all writings, are, first, that they should be so interpreted, as to exhibit, if possible, a consistent sense ; that is, so that one part should not contradict another, nor be unintelligible in itself, nor, upon the whole, present a sense inconsistent with the rules of logic, the nature and circumstances of the

* A *sentence* is an assemblage of words so arranged, as to present a complete sense.

A *clause* is a distinct subdivision of a paragraph, and may consist of one or more sentences.

A *phrase* is an incomplete part of a sentence.

P p 3

subject

subject and facts known to the author, or opinions held by him, or to evident metaphysical or moral truths.

1077. The second is, that they should be expounded according to the intent of the author, either expressly elsewhere manifested, or if not, at least naturally suggested, or necessarily inferable from external circumstances. See Grot. in Matthew, chap. i. v. 16.

In conformity to the first maxim, the following rules have been laid down.

1078. First, where the rules of grammar are not exactly observed, but the sense is intelligible, as in the *lingua Franca*, the document is not to be rejected for *mala gramatica non vitiat chartam*.*

1079. Secondly, where a phrase or sentence is grammatically just, but the sense absurd or unintelligible, we cannot reject some words to make sense of the remaining, but must take them as they are; for there is nothing so absurd or nonsensical, but by rejecting or omitting may be made sense.† But, nothing is

* Wingate's Maxims, 18.

† 1 Salk, 324.

more frequent in all languages, than to *supply* some words when the sense evidently requires it.

1080. Third, when a phrase is nonsensical, by its repugnancy to something that precedes it, the preceding matter being rational, shall not be rendered void by the repugnancy that follows it.*

1081. Fourth, relative words should be referred to the next antecedent, where the matter itself does not hinder,† as it frequently does.

1082. Fifth, the surest method of explaining any writing, consists in taking the collective sense of the whole; construing one part by another part, the doubtful and obscure by the plain and clear.‡

1083. Sixth, and in general, the rules of logic relative to *universal*, and indefinite propositions, and their *opposition*, *equivallency*, *complexity*, &c. are to be observed. Some of them, indeed, are expressly laid down by our legal writers, as that *indefinite propositions are*

* 1 Salk, 324. † Wingate, 15. See Hardr. 77.

‡ C. L. 387, 2 Inst. 31 Plowd. 365, 11 Mod. 61.

equivalent to universal in conjunctivis oportet utramque, in disjunctivis utramvis esse veram.†*

Quod convenit generi convenit speciei sed non vice versa.

1084. Hence, first, the reference of words is often inverted, in order to adapt them to the sense of the parties, when, from other circumstances in the document itself, the intent can be discovered.‡

1085. Hence, secondly, the rules even of grammar and logick, are overlooked when the intention of the parties is evident, and opposes compliance with them. Thus, though it is a rule that *quoties in verbis nulla ambiguitas, ibi nulla expositio contra verba expressa fienda est*;§ yet, where the intent is manifest, it is held, that words shall be understood according to the intent of the parties,|| and it is the office of judges to expound words according to the intent of the common people, and not according to their definition,¶ where their transactions among each other

* Plowd. 23; 2 Roll, 57; 2 Bulstr. 178.

† Wingate, 13.

‡ C. L. 170. Plowd. 134.

§ C. L. 147, Wingate, 24. || 2 Lord Raym. 805.

¶ 6 Rep. 64^b.

are concerned,* and the intention is evident.

1086. Hence, thirdly, *mala gramatica non vitiat chartam*, as already observed.

1087. Hence, fourthly, *conjunctives* may in some cases be taken as *disjunctives*. Grot. in Matthew, chap. v. v. 19, p. 43, as *and* for *or*,† and *disjunctives* for *conjunctives*, as *or* for *and*.‡

1088. Hence, fifthly, in some languages the *past tense* is construed to denote, in particular cases, the present or future tense, Glafs. 417, according to the exigency of the case.

1089. From all which we may conclude, that to form a rational interpretation, regard should be had to both these rules. If the expressions be dubious, the sense must be derived from the intent, and if the intent be dubious, it must be derived from the express words. If both be dubious, no rational interpretation, can be formed; but if both be

* 6 Rep. 66.

† Plowd. 289, 6 Vin. 432, 2 Vin. 263, in note. Brownl. 72, 1 Vesey, 15.

‡ C. L. 99^b, 6 Vin. 432.

clear,

clear, but adverse to each other, the intent shall prevail.

1090. In ancient writing, where the sense is not marked by punctuation, the above maxims must be diligently attended to. Michaelis remarks, that the most ancient manuscripts of the new Testament have no points, and that in the modern manuscripts that have them, they were not copied from ancient documents, but were added by the transcribers of their own authority. Vol. ii. Part I. chap. xxiii. sec. 2. It is doubtful whether the *spiritus asper* or *lenis* were used by the apostles. Ibid. sec. 7. Nor are accents found in the copies antecedent to the eighth century. Ibid. sec. 8. The division of chapters into verses was made by Robert Stephens in 1551. Ibid. sec. 11.

1091. But to be more particular, we must observe, that words are susceptible of different significations; for they may be understood either *Literally*, or *Figuratively*, or *Equitably*, and in all cases, the proper sense of a word or phrase, whether literal, figurative, or equitable, is that which the context and general intent of the writer manifestly demand. Thus the
word

word *man* denotes the human species, a male of that species, a full grown male, a piece of wood on a chefs board ; yet we never mistake the meaning, being directed thereto, by what gave occasion for its being employed.

SECTION II.

OF THE LITERAL SENSE.

1092. The literal sense of a word is that which it naturally presents in common acceptation, when singly considered, it being the primitive and original sense ; or it is that afforded by its definition ; but proper names and many others are unsusceptible of definition ; the literal sense may be clear, or ambiguous, or obscure.

1093. Where the literal sense of words is clear, and consistent with the context, that is the general series of the discourse that precedes and follows, and also with the general intent and meaning of the writer, elsewhere expressed, it must be deemed to be that of the writer. And hence the maxim of lawyers :

Quoties

*Quoties in verbis nulla ambiguitas ibi nulla expositio contra verba expressa faciendâ est.**

1094. But where the literal sense is *inconsistent* with the nature of things, or even highly improbable, yet agreeable to appearances, received opinions, and modes of expression in general use, it is not necessary that it should be deemed the *real sense* of the writer, unless it evidently appears to have been so understood by him ; and consequently these *modes* of expression may be taken in a sense not strictly literal, but in a sense *equivalent* to the literal. Thus Astronomers and Philosophers all over Europe, though firmly persuaded of the immobility of the sun, use the same language as those who believe it to turn round the earth, and talk of *sun-rise* and *sun-set*, &c. as others do, the appearances being exactly the same, whatever system is held concerning their cause. So we call the first day of the week *Sunday*, that is the Sun's day, and the second *Monday*, or Moon's day, &c. ; though no one at present believes days to be dedicated to, or under the influence of planets or heathen gods.

* C. L. 147, Wingate 15.

So

So Philosophers, in conformity to common language, ascribe heat to fire, and colours and tastes to the objects that excite or are conjoined with those sensations, though they well know that sensations exist only in the mind. So no physician at present, attributes a certain nervous disorder to St. Vitus, though in conformity to an anciently received opinion, they still call it *St. Vitus's dance*. In all these cases though the strict literal signification is rejected, a sense equivalent to its real import is retained.*

1095. If the literal sense of words or phrases is inconsistent with the nature of things,† the design of the writer, received opinions, or common language, it cannot be taken as the real sense of the words, though it perhaps may be used *figuratively*, as will presently be seen; unless the writer be supposed to mistake, either through ignorance or misrepresentation. But if it be inconsistent with the thread of the discourse, and the

* See Edgw. on Education, 2d edit. vol. i. 298, 299.

† By the nature of things, I mean, known truths, whether philosophical, historical, geographical, or chronological.

words

words cannot be understood, even figuratively, there such words are evidently inserted by a mistake, whether of the author, or his copyist, or of the printer, or an interpolation.

1096. There are many words, in all languages, whose literal sense is ambiguous, either because they are capable of a double sense, or of a double reference, each inconsistent with the other. In the Greek and Latin languages, many verbs may be taken either actively or passively. The same prepositions are made to express very different relations; and in all countries, different individuals are often denoted by the same name.

To confine myself to a few instances in our language; *oversee* signifies either to *superintend* or to *neglect*; the first signification it has in the *active* voice, the second in the *passive*. *Overlook* signifies also to *revise* or to *neglect*; many other examples might be adduced.

The particle *of* sometimes denotes the relation betwixt two objects, but leaves it doubtful which is the *subject*, and which the *term* of the relation, when each is capable of being either the one or the other. Thus, the *love of God* denotes indifferently, either the
love

love which we bear to God, or that which God bears to us. So the particle *for*, among many other significations, may denote the cause or motive, or disregard to a cause or motive, as when it signifies *notwithstanding*. See Johnson's Dictionary, and Horne Tooke. And the same variety of significations may be found in most prepositions. So where, in the Guardian, No. 80, it is said, "your character assures me that the clergy have not the least right to your protection;" the words *not the least right*, abstractedly considered, may signify, either that they have *no right whatsoever*, not even the smallest, or, that their right is *not the smallest* among the different rights that claim protection. Thus in construction, the antecedent to the relative *who*, or *that*, &c., is often ambiguous. So "Solomon the son of David, *who* built the temple of Jerusalem, was the richest monarch that ever reigned over the people of God." And "Solomon the son of David, *who* was persecuted by Saul, was the richest monarch, &c." In these two sentences the word *who* is similarly situated, yet in the former, it relates to the person first mentioned, in the latter, to
the

the second ; but this relation to the one or to the other; it would be impossible for any reader to discover, as Dr. Campbell well remarks, who had not some previous knowledge of the history of those kings. See his philosophy of Rhetoric, vol. ii. p. 39 ; and Sir Sidney Smith's Answer to Pichegru ; 3 Edgw. on Education, p. 249.

1097. From all which it follows, that a just interpretation cannot be founded on the mere letter, but on the letter taken in connexion with the intent, purport, and design of the writer, explicitly and unambiguously laid down in other parts of the document, or otherwise clearly proved, and consistently in many cases with extrinsic circumstances.

1098. To inspect this important subject more minutely, we must take into consideration the different concomitant circumstances in which the literal sense may be supposed ambiguous.

1099. First, it may be plainly ambiguous, and each meaning equally probable. In this case, our law decides, that it shall refer or be applied to the most considerable and worthiest of the objects comprised within its meaning

meaning. So if a grant be made to I. S. and both father and son are so called, the law understands that the father only is meant.* So if money be payable on St. Michael's day, Michael the archangel; and not Michael de la Tomba shall be intended.† *A digniori fit denominatio.*‡

1100. Secondly, it may be consistent with law or probability, when one way interpreted, and inconsistent when otherwise interpreted: in such case the genuine meaning cannot be justly doubted.§ It is highly *improbable* that a writer should use a word, phrase, or sentence, in a sense inconsistent with what he has already advanced, and yet this sometimes happens. But it is *impossible* that he should use a word that has no connexion or coherence with what precedes and follows, if we suppose him in his senses.

1101. Thirdly, if both senses of an ambiguous expression, be consistent with law, or the nature of things, then that which can be proved to be most conformable to the inten-

* 6 Rep. 20, Salk. 7, Bridgm. 15. † 2 Inst. 485.

‡ Wingate, 265.

§ C. L. 42^b.

tion of the writer, must be deemed to be the genuine sense.* So the word *creature* is equivocal in Rom. viii. 19; or, it may denote men or insensible beings: Grotius takes it in the last sense, but Locke, more justly, in the first sense.

1102. Or, fourthly, one sense of the ambiguous word or phrase, &c. may be agreeable to the plain or probable purport, design, or intent of the writer, and the other inconsistent or less agreeable thereto: in this case also, the interpretation to which the preference should be given, is obvious.

1103. And here we must observe, that words may have different senses in different ages, and this the law will notice.† But it is plain, the writer must mean that sense in which the word was taken in his age, unless the contrary appears. For, as a great judge well observes, the meaning of words in any law, is to be known either by their use and signification before the law was made, or from some law or institution declarative thereof.‡

* 2 P. Wms. 136, Powel on Devises, 494, 495.

† 3 Mod. 28.

‡ Vaugh. 305.

1104. The probable sense of ambiguous words in laws and charters, is also said to be frequently explained by long usage.* With regard to laws, this method may be just, as they are explained by those who are appointed to explain them; but with regard to charters, it may be fallacious, for the intent of those that framed them, is not necessarily that of those for whom they were framed.

1105. It is also laid down as a maxim in law, that words in a grant are taken most strongly against the granter. This is just, wherever there is any palpable ambiguity, for such words excite a hope, which it would be unjust to excite, and disappoint; but where the ambiguity is not obvious, either to the grantor or grantee, the intention is wanting in the former, and no disappointment can arise in the mind of the latter, and therefore such construction appears unjust. See Paley.

1106. Fifthly, if the sense of a clause be obscure, by reason of an erroneous description, whether of a person, or of a thing, it may be

* Vaugh. 169, Peake on Evidence, 120.

elucidated by extrinsic circumstances ; for, if the intent can be ascertained, the clause must be interpreted according to it.*

1107. Sixthly, if a word is capable of being understood either *generically* or *specifically*, it should rather be taken generically, unless there is something that implies rather the specific, than the generic sense. Thus the word *funis*, denoting equally either *ropes* in general, or cables, in the fourteenth ode of the first book of Horace, denotes *ropes*, according to the ablest interpreters, and not cables, though Bentley thought otherwise. See Dacier and Sanadon's notes.

SECTION III.

OF THE FIGURATIVE SENSE, OR TROPES.

1108. Words taken in a sense which they do not literally denote, but barely suggest to the mind, are called *tropes*, (from the Greek *τροπή* *verto*), as their literal sense is as it were

* 11 Rep. 21^a. Powel on Devises, 499.

converted

converted into another, different indeed, but grounded on a relation which the literal sense bears to some other object. And as this relation, or the object suggested by it, is thus, as it were, sketched out by this trope, it is called *a figure*, and the sense or meaning, thus suggested, is called the *figurative sense*.

1109. Many have indeed distinguished tropes from figures; but, as Dr. Johnson observes, they are frequently (and justly) confounded by the most accurate writers.*

1110. Figurative language is employed either through necessity, as seen No. 21; or, in order to excite strong emotions, or enlarged conceptions of things. The necessity arose either from a scarcity of words, as in the earliest and least cultivated languages, or from a real impossibility of finding suitable expressions in the literal sense. Thus, words literally denoting objects of sense, are employed to denote mental operations, emotions, perceptions, or conduct, which are not objects of sense, but nevertheless bear some relation to such objects. So we say, a *hard* or *soft hearted*

* Diction. *Figure*.

man, a *clear* head, a *rough* or *smooth* behaviour, *inflamed* by anger, *warmed* by love, *swelled* with pride, *melted* into grief, &c. And these, Dr. Blair remarks, are almost the only significant words we have for such notions.* Thus the word *voice*, originally invented to signify the articulate sound formed by the organs of the mouth, is employed to signify the intentions and ideas of men to each other; thus, to *give our voice for any thing*, signifies to give our assent or sentiment in favour of it. Nay, it was transferred to signify any intimation of our will or judgment, though given without the interposition of voice in its literal sense, or any sound uttered at all; thus we say, listening to the *voice of conscience*, the *voice of nature*, the *voice of God*. And this not so much from barrenness of language, as from an allusion we chuse to make to *voice* in its primary sense, in order to convey our idea with more force.† So, human passions are often ascribed to the Supreme Being, though it is impossible they should be applied in the gross literal sense, as they involve

* 1 Blair's Lectures, 154.

† Ibid. 356.

imperfections

imperfections incompatible with the Divine nature.

IIII. In interpreting many important documents, doubts frequently occur, whether certain words or phrases should be understood literally or figuratively. Before we enter on an examination of this subject, it is proper that we should notice the relations, on which the most usual figurative expressions are grounded. These relations are principally the four following: *Similitude*, (to which class allegories, parables, types, symbols, and personifications belong.)

Secondly, *exaggerated or extenuated similitude*, called hyperbole.

Thirdly, *the relation of opposition*, as in irony.

Fourthly, *the relation of connexion*, as in metonymy.

*Of Metaphors.**

IIII2. A *metaphor* is a word, used to express a similitude which is discerned, betwixt the thing signified, taken in its literal sense, or

* From *Meta* trans and *φέρω* fero.

some of its properties, and some other object of which it is predicated. It therefore implies, a mental or tacit comparison of both objects.

Thus a sovereign is called the *head* of the state, because, as the head governs the body and is superior to it, so the sovereign governs, and is superior to his subjects.

So the Scriptures mention the *eyes, ears, hands, arms, words, and mouth* of God, as he possesses powers in some measure analogous to the functions of those organs or members. So human passions are, in popular language, attributed to God, as *anger, hatred, revenge, repentance*, and even *experimental knowledge*, because he produces effects in some respects similar to those that are derived from such passions.

All the epithets mentioned No. 1110, are evidently metaphorical. It is needless to mention any further instances.

*Allegory.**

1113. *Allegory* is a discourse, sentence, or narration, entirely metaphorical; the inten-

* From ἄλλο aliud, and Ἀγωγεῖω narro.

tion

tion being, that it shall not be understood literally, yet alluding to that sense, and grounded on a similitude with it; as when it is said, that wealth is the daughter of industry, and the parent of authority, daughter and parent are evidently metaphors, and the sentence is an allegory.

A *parable* is a narration in which a fictitious incident is related as real; the personages introduced are such as might really exist and act as related.

1114. An *apologue* is also a fabulous narration, intended for moral or political purposes, but in which, the actors are incapable of language, or even of perception, as Æsop's fables, and the celebrated apologue of Menenius Agrippa.

1115. *Type*, (a copy, image, or resemblance) are words, actions, or things, which point out other actions or things, quite different, but which have some resemblance to the former, these last are called *prototypes* or *antitypes*.

1116. A *symbol* is some corporeal thing, used to represent or denote something that hath no corporeal existence. Thus, crowns, scepters,

scepters, and maces, are the symbols of authority.

1117. *Prosopopeia*, or personification, is a species of metaphor, as personality is attributed to things incapable of it, as to insensible beings, or words, or even modifications of the mind, as the various passions and emotions, virtues, vices, and other abstract notions, as *fortune, fate, &c.*

Thus, when Christ says, *let not your left hand know what your right hand does*, knowledge, and consequently personality, is attributed to the hands.

So St. Paul, Rom. viii. 24, says, *hope which is seen*, as if hope were a person. So we say, *love is blind*. So *pallida mors æquo pulsat pede*, &c., as if death had been a person. So Satan, which is clearly a word used to denote *evil*, 2 Kings xix. 22, 3 Kings, v. 4, Luke xiii. 16, was, in vulgar language, spoken of as a person or malignant spirit.

Hyperbole.

1118. (From *ὑπερβαλλω* ex *supero*,) as when we say, *all the world was there*, to denote a great, but indefinite number; or, *he goes*

goes a snail's pace; or, as *swift as the wind*, &c. ; in such cases, exaggeration and extenuation are clearly perceived.

Irony.

1119. *Irony*, denotes speaking by contraries, expressing one thing and meaning another. It is generally used for rallying or scoffing; in speaking, it is perceived by the tone of the voice, and in writing, by the evident discordancy of the subject with what is said of it.

Metonymy.

1120. When one word is used instead of another which it suggests, by reason of the connexion which the things signified by both have with each other, the word thus employed instead of another, is called a *metonymy*.

As the connexions which things have with each other, are numerous and various, so also are these substitutions of the words that denote one of the links, for those that denote the other, or the whole. I shall mention
only

only the most considerable instances of these substitutions.

First, as *causes and effects* are connected with each other, the *cause* or *instrument* is often put for the *effect*. Thus a legible *hand*, means a legible *writing*, and tongue or lip for *language*; or an *effect* for a *cause*, as in the phrase, he *earned his bread by the sweat of his brow*, that is by *labour*, of which sweat is the effect. So the *author or inventor* of any thing, being the cause thereof, is substituted for the work or thing invented. Thus in the gospel, it is said, *they have Moses and the prophets*, instead of the writings of Moses and the prophets. So the words *Ceres* and *Bacchus*, are used for bread and wine, of which they (distinctively taken,) were thought to have introduced the use. And so *Mars* denoted war, *Vulcan* fire, *Pallas* oil, &c.

Secondly, when a passion or desire is put for the object of that passion or desire. Thus, ad Coloss. 5, *on account of the HOPE reserved for you in heaven*, meaning the *object* of your hope, which is reserved, &c.

Thirdly, so a *part of any thing* is put for the *whole*, and the *whole* for the *part*, they being
connected

connected with each other. Thus, in Latin *puppis*, and in English *sail* is put for a ship. So we say, ten sail of the line, for ten ships of the line.

We say also, a *person* was buried, though we believe and mean, that his *body* only was buried. And also, that such a person is in the other world, or in heaven, though we believe his soul only to be there. So a general is put for his army, of which he is the principal part, as *Hanibal defeated the Romans*.

Fourthly, the *container* is often substituted for the thing contained in it. So we say, *he loves his bottle*, instead of wine contained in it. And Virgil says, *ille impiger hausit spumantem pateram, et toto se proluit auro*. Where we see a double metonymy, namely, the present, and that of *gold* taken for the cup, of which it was the material cause. So the *seat or residence* is put for the persons therein residing, as *heaven* for God, when we say, may heaven defend us. So a country or city, &c. may be taken for the inhabitants, as *France declared war*, &c. The thing contained, is also sometimes substituted for the *container*. So Virgil says, *vina coronant for pateras*.

Fifthly,

Fifthly, the sign for the thing signified. So the *crown and scepter* are taken for the royal authority, of which they are the *signs*. So the Latins signified *peace* by the toga, as *cedant arma togæ*, &c.

Sixthly, *abstract* terms for *concrete*. So justices denote the judges, and the *watch*, the watchmen. And Virgil says *noctem custodia ducit insomnem*.

The choice of names is not a matter of indifference to those, who wish to argue accurately; when they are obliged to describe their feelings or thoughts by metaphoric expressions, they will prefer the simplest; those with which the fewest extraneous associations are connected. Words, which call up a variety of heterogeneous ideas to our minds, are unfit for the purposes of sober reasoning; our attention is distracted by them, and we cannot restrain it to the accurate comparison of simple propositions. We yield to pleasing reveries, &c. 3 Edgeworth on Education, 8vo. p. 130.

SECTION IV.

RULES WHEREBY TO DISCOVER WHETHER THE PRO-
PER SIGNIFICATION BE LITERAL OR FIGURATIVE.

1121. All words, phrases, sentences, or discourses, should be understood in the literal and not in any figurative or typical sense, when the literal sense is consistent with reason, that is, with other known truths, whether physical, metaphysical, historical, or moral, the scope and intention of the writer, as elsewhere clearly indicated, or at least not contradicted by him; nay, if contradiction to such truths appears, by the context or otherwise, to have been intended by the writer, his assertions must still be taken in the literal sense; and the reason is, because the literal sense is that alone which was intended and designed in the primitive formation of language, the figurative being only a secondary sense, introduced either through necessity, or to give more strength or vivacity to expressions.

1122. But if the contradiction to known
truths

truths be evident, or certain, or probable, and the intention of asserting it, neither evident, certain, or probable, but, on the contrary, either certainly or probably the reverse, in such case, the words, phrases, discourse, or narration, that involve that contradiction, must be taken in a figurative sense, or at least, as mere popular expressions, as shewn in No. 1094. For, when rational beings communicate their thoughts by any signs, it would be unjust, it would be injurious to assign to them, unnecessarily, an irrational meaning. It would be to suppose them idiots, liars, or ignorant, or cruel, as the case may be: And such strict acceptation were unnecessary, if any other were probable or possible.

1123. Hence, first, where the literal sense is *metaphysically impossible*, as in the phrase *inflamed with anger*, &c. it is plain the word must be understood *figuratively*.

1124. Secondly, if words understood in the literal sense, or the event they comprise, be contrary to the *laws of physical nature*, and inconsistent with the circumstances that should naturally accompany or succeed such an event, literally understood, and not evidently

dently intended by the writer to be taken in that sense, they must be taken figuratively. Thus, when Christ called Herod a *fox*, Luke xiii. 32, we must not suppose, (as some have done), that Herod was instantly transformed into a fox, a supposition inconsistent with history, but rather consider that word as a metaphor, denoting *art* and *cunning*, as Grotius and almost all interpreters have considered it.

So, when the prophet Isaiah says,* that *the wolf and the lamb shall dwell together*, this in the literal sense being contrary to the laws of animal nature, must be understood figuratively, denoting, that at a subsequent period, oppressors shall dwell in peace with their harmless neighbours. This figure is frequently used by Arabic and Persian writers, as the celebrated Sir William Jones has shewn.

1125. Thirdly, when the literal sense denotes something *morally impossible*, being incompatible with what can with any degree of probability be supposed to happen in the

* Chap. xi.

general state of society, it must be rejected, and the words that convey it, must be understood *figuratively* of something approaching as near as possible to the literal sense; as when Christ requires, that *if the leg or hand scandalize you, they should be cut off*, Matth. v. 30. So *proverbial expressions* which are evidently absurd in the literal sense, must be understood *figuratively*, as they generally are by the people, among whom they are used. However, some wrong-headed Gallican Bishops in the fifth century, misapprehending the precept of Christ, Luke xii. 35, *Let your loins be girt, and lamps burning in your hands*, thought themselves obliged to wear girdles, and went about in an unusual dress; but a sensible pope of that age, represented to them that these words should be taken *figuratively*, and humourously asked them why they did not also carry burning lamps in their hands.*

1126. If it should seem *doubtful*, whether a word, or a sentence, or discourse, should be understood literally or figuratively, both being equally possible or probable, the literal sense,

* Fleury's Eccles. Hist. vol. v. p. 628.

as being the most natural, should be preferred.

1127. If the figurative sense be susceptible of *different* significations, that which deviates least from the literal, or, which is most conformable to the scope and intention of the writer, and least strained and far fetched, should be deemed the *proper* sense. Thus, St. Paul having said, Rom. viii. 19, *the earnest expectation of the creature*, (or rather, of *the creation**), *waiteth for the manifestation of the sons of God*; and, v. 22, *for we know, that the whole creation groaneth and travaileth in pain, until now*; Grotius thinks the *whole creation* meant the *universe*, even insensible beings, by a sort of prosopopœia; but Locke, taking the words also in a figurative sense, thinks they denote only mankind, particularly the Gentiles; and this interpretation being less strained, and approaching more nearly to what is literally possible, seems preferable to the first.

Whether the 14th Ode of the first book of

* So Wakefield translates it, or the *world* as Newcome interprets it.

Horace should be understood historically, or allegorically, has been much disputed; all indeed necessarily allow the address, *O navis*, to be a prosopopœia; but, some think, that Horace meant to dissuade a second voyage in a ship, already much shattered, indeed so shattered, that it were impossible it should again put to sea with any prospect of safety. Others therefore think, and in my opinion with greater probability, that by a *ship*, he meant the republic, which he meant to deter from a second civil war. The exact application of the whole to the circumstances of the times, may be seen in Dacier and Sanadon's notes, and Watson's Horace.

1128. A figurative expression ought to follow the sense of the context, and not wrest the visible meaning to something remote from the subject in hand.*

1129. Hence, metaphors should not be construed to denote a similitude, in every respect, but in that only, on which they are founded; *non enim res tota toti rei necesse est*

* Locke on Rom. ix. 21.

similis

*similis fit, sed ad ipsum ad quod conferetur similitudinem habeat oportet.**

1130. Besides the figures here mentioned, commonly called rhetorical figures, there are others in all languages, called *grammatical figures*; these consist in certain constructions, contrary to the common and natural rules of the language, yet authorized by the practice of the best writers. But for these, I must refer to the grammars of Port Royal, which explain those of the latin and Greek languages, and shall only observe, that neither these nor the former figures, are in general capable of being literally translated into any other language, as may be seen on consulting Arias Montanus's version of the New Testament, and Pagininus's of the old. See Dr. Campbell's Philosophy of Rhetorick, vol. ii. p. 181, 182.

1131. The wisest men suit their language to the comprehension of those they address. Therefore, when they are aware that general truths, literally expressed, are not suited to the capacity of those they mean to instruct, they

* Cicero vel autor ad Herennium, lib. iv. cap. 46.

convey them in such figurative language, as they know will make their general purport more easily understood. Such is the famous apologue of Menenius Agrippa.

1132. Hence, their language must be suited to appearances, and to popular opinions, (unless it be their express intention to alter those opinions,) and not merely to such opinions as they themselves entertain. So, where St. Paul, 1 Corinth. i. 21, says, *it pleased God by the foolishness of preaching, to save those that believe*, it is plain his preaching was not foolish in his *own opinion*; his meaning therefore was, that it *appeared to others* to be foolish.

1133. Therefore, though figurative and popular language is not literally and logically true, yet it is *transcendentally* true, when it answers the general intent of the speaker, and is so understood by the hearer, and therefore in a sense fully equivalent to the literal.*

* See Priestley's Lectures on Oratory, Lect. xi. p. 76, in 4to.

SECTION V.

OF THE EQUITABLE SENSE.

1134. The equitable sense of words, phrases, clauses, discourses, or documents, is that which the express, or justly presumed intention of the author demands; it is, therefore, either *strictly* literal, or narrow, or enlarged, in order to make it coincide with the intention when thus discovered; such interpretation is called *liberal*.

1135. In conformity with the second general maxim, many rules are established. Its consonance with universal reason, cannot be better illustrated, than by the words of the immortal Grotius, on Matth. xii. 3. *Scire leges non est verba earum tenere, sed vim et potestatem; qui a prior et potentior est quam vox, mens dicentis. Ideo quoties certis indiciis comprehendi potest mens ejus qui legem scripserit, præferri debet mens dicto. Verum enim est quod apud Ciceronem lib. de inventione secundo legimus, nullam rem, neque legibus neque scriptura u.la, denique ne in sermone quidem quotidiano,*

R r 4

atque

atque imperiis domesticis, recte posse administrari si unus quisque velit verba spectare, et non ad voluntatem ejus qui verba habuerit accedere, &c.
Now the agreement of parties is a law to the parties.*

1136. The documents to which this mode of interpretation is applicable, are either *authoritative*, as statutes, and the laws contained in the Decalogue and New Testament; or *directive*, as awards and testaments; or *conventional*, as treaties and agreements. I shall briefly mention some few maxims relating to the first head, as being most general and important.

1137. The meaning and intention of a law, should be collected from the several parts of the act taken together, or from a single part, when not opposed by the collected sense. Also from the occasion of enacting it, ascertained by the history of the times, and an attentive retrospect of previous regulations relative to the same object, as well as of the nature of the act, whether it be *remedial* or *penal*, and other circumstances not necessary to detail here.

* See Powell on Agreements, p. 370.

1138. But,

1138. But, of whatever kind the law may be, it must be presumed, (unless the contrary be evident,) that the legislature, which in legal intendment, is the centre of national wisdom and justice, cannot have intended to enact what would be palpably absurd, idle, or inoperative, or unjust, or oppressive. Therefore, if the express letter of the act should direct or imply such gross deviations from wisdom or justice, it must be construed, so as to be rendered consistent with both, either by enlarging, restraining, qualifying, or even contradicting the letter of the act. Of this mode of interpretation, I shall produce several instances; this rule extends equally to the interpretation of the Holy Scriptures.

1139. Thus, first, if a person or thing be *misnamed* in a statute, yet, if it otherwise evidently appears, that the person or thing, so misnamed, is the object intended by the statute, by the agreement of the description with that object, and with no other, the statute shall have its effect thereon, 10 Rep. 57^b. Here the construction is *contrary to the letter*, that the statute may not be inoperative,

tive, and the description is a surer indication of its object than the name.

1140. Thus, secondly, though it is enacted in Magna Charta, chap. 11, that common pleas should not follow the King's court, (that is, should not be pursued in the King's Bench), yet, if in a real action, the writ be abated by judgment in the court of common pleas, and this judgment be reversed for error in the King's bench, the plea shall be proceeded upon there, *by necessity*, lest there be a failure of justice; so that the case must be deemed tacitly excepted out of the statute, 2 Inst. 23. This interpretation also is contrary to the letter of the act.

1141. Thus, thirdly, where a statute grants or allows the *greater*, it impliedly grants or allows the *lesser* of the same sort or kind. And where it prohibits or excepts the *lesser*, it impliedly prohibits or excepts the *greater* of the same sort or kind: See Moor's Reports, 853, 1 Roll. Rep: 404, and Hardr. 424. For, though such cases be out of the act, yet it were evidently absurd, not to include them in its implied meaning.

1142. Thus, fourthly, the statute of Westm.
2 cap.

2 cap. 9, having enacted, that *infants* should not be forejudged without mentioning *married women*, it was held, that they also were within the statute, 2 Inst. 375, as justice equally required it.

1143. Thus, fifthly, though it was enacted by a statute, 3 James I. that Popish recusants convict, shall stand and be reputed *to all intents and purposes disabled*, as persons lawfully excommunicated; and thence it was inferred, that they were not competent to bear witness, since persons excommunicated are not; yet a very able law writer, namely, Serjeant Hawkins, justly pronounces this inference too severe. For competence to testimony is an interest of public justice. 2 Hawk. P. C. B. i. cap. xii. sec. 6, and 1 Lofft, 263.

1144. Nay, it has been adjudged, that if a statute be against common right and reason, it shall be considered as absolutely void, 8 Rep. 118, and Dyer, 313.

Of

Of Remedial Laws.

1145. A remedial law, is that which tends to remove a mischief, without annexing any particular penalty, or to compensate for some injury, as to give costs, &c.

1146. Statutes that aim at suppressing a mischief, acknowledged to be such at common law, are construed liberally, that is, favourably to the common law. And therefore it was held, that cases of a similar mischief, shall be remedied by the statute where it is declarative of the common law. C. L. 76, and 290^b.

1147. But statutes against mischiefs, not deemed to be such at common law, are to be construed *strictly*. See 2 Inst. 110.

1148. Where the general words of a statute comprise an act, in reality not mischievous, such words, though within the letter of the act, shall be deemed in reality out of it.

Thus, though it was enacted by the statute of Gloucester, chap. vii. that if a woman makes a lease for life of her dower lands, the reversioner shall have a writ of entry presently; yet this should be understood of a lease made for

for another person's life, and not of a lease made for her own life. 2 Inst. 309.

Penal Laws.

1149. Statutes, whose principal aim is to punish the offender, are called *penal* laws.

1150. It is commonly said, that penal laws are to be construed strictly; but the meaning is, that they shall not be extended by doubtful and ambiguous words, and that the punishment shall not be increased beyond what the law requires. 2 Inst. 381, Hob. 270.

1151. Also the necessity of self-defence; excuses acts that would otherwise be criminal, as breaking out of prison when on fire, &c. 2 Inst. 590.

1152. But, where a crime is without the letter of the act, yet if it be of the same nature as that within the letter, and equally capital, it is held to be within the statute.

1153. So the statute 25th Edward 3 d, which makes it treason for a servant to kill his master, is extended to killing the mistress, being the master's wife. 11 Rep. 34^b, Plov vd. 86, Hawk, P. C.

Conclusion.

Conclusion.

1154. In general, we may remark, that comprehensive universal words, shall in agreements be taken in an equitable sense; and how much more reason is there for construing them so, in laws in which no fraud should be presumed.

1155. Thus, if I grant *all* my trees growing on my lands in *D*, it shall not extend to apple or other fruit trees in my orchard, or garden, if there be any other trees on my ground. Powell, Contracts, 378.

1156. So if I grant a man a common out of *all* my manor, yet he shall not have it in my garden or any such place, but only in commonable places. Powell, *ibid.* 377.

Yet, in the case of Arnold and Count Schmettau, Berlin, 1775, where the Count had leased a mill to Arnold, and in the lease it was expressly covenanted, that the Count might furnish his fishponds with water from *any part* of the stream that worked the mill; and some years after, the Count made a cut from the stream to his ponds, a little
above

above the mill, and diverted so much of the water, that the mill could not work, the Prussian judges interpreted the covenant strictly, and refused relief to the miller. But, for this judgment they were severely punished by Frederic the Second.

THE END.

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